



June 23, 2021

Texas Commission on Environmental Quality
Critical Infrastructure Division
12100 Park 35 Circle, Bldg. A
Austin, TX. 78753
MC 177

Re: 2021 Mechanical Integrity and Reservoir Pressure Testing Report of WDW-422 for TM Deer Park Services LLC.

Dear Sir/Madam

Enclosed is one copy of the referenced report for TM Deer Park Services LLC at their facility in Deer Park, Texas. If you have any questions or comments, please call me at (512) 914-8590.

Sincerely,

A handwritten signature in black ink that reads "Mike Johnson".

Mike Johnson
Technical Manager
Strata Technologies, LLC

cc:

Christina Perez
TM Deer Park Services LLC
PO Box 1914
Deer Park, TX 77536

Richard Heitzenrater
TCEQ
NRC Bldg., Ste. 1200
6300 Ocean Dr., Unit 5839
Corpus Christi, TX 78412-5839

Ken Johnson
USEPA Region 6
1445 Ross Ave., Ste. 1200
Dallas, TX 75202-2733

2021

**ANNUAL MECHANICAL INTEGRITY AND
RESERVOIR PRESSURE TESTING OF
WDW-422**

Prepared for

**TM DEER PARK SERVICES LLC
DEER PARK, TEXAS**

Prepared by

**STRATA TECHNOLOGIES, LLC
AUSTIN, TEXAS**

June 2021

TABLE OF CONTENTS

1.0	Executive Summary	1-1
2.0	Mechanical Integrity and Reservoir Pressure Testing	2-1
2.1	Annulus Pressure Test	2-1
2.2	Radioactive Tracer Survey	2-1
2.3	Reservoir Pressure Testing	2-3
2.4	Reservoir Pressure Falloff Test Analysis	2-4
3.0	No-Migration Petition Model Comparisons	3-1
3.1	Comparison of Bottomhole Pressure	3-1
3.2	Comparison of Transmissibility	3-1

Tables

2-1	2021 WDW-422 Reservoir Pressure Falloff Test Summary
3-1	Historical Static Bottom-Hole Pressures for WDW-422

Figures

1-1	Wellbore Schematic
2-1	Annulus Pressure Test
2-2	Injection Pressure Test Data
2-3	Cartesian Plot of Pressure Falloff Test
2-4	Diagnostic Plot of Falloff Test
2-5	Semi-Log Plot of Falloff Test
2-6	Expanded Semi-Log Plot of Falloff Test
2-7	Cartesian Plot of Measured and Simulated Falloff Test
2-8	Diagnostic Plot of Measured and Simulated Falloff Test
2-9	Semi-Log Plot of Measured and Simulated Falloff Test
3-1	Open Hole Log Strip for WDW-422

Appendices

- Appendix A Certification of Mechanical Integrity and Reservoir Pressure Testing for TM Deer Park Services LLC WDW-422
- Appendix B Chronology of Daily Activities for Mechanical Integrity and Reservoir Pressure Testing of WDW-422
- Appendix C TCEQ Correspondence and Procedures for 2021 Mechanical Integrity and Reservoir Pressure Testing for WDW-422
- Appendix D WDW-422 Annulus Pressure Test Data & Calibration Certificate for Calscan Hawk 9000 SN 6042
- Appendix E Coastal Wireline Services, Inc. Radioactive Tracer Survey
- Appendix F Injection/Falloff Test Data for and Calibration Certificate for Calscan Badger SN 91334, Compact Disk of Reservoir Pressure Test Data and Trans II files
- Appendix G TM Deer Park Services LLC: Laboratory Analysis of Fluid Samples

1.0 EXECUTIVE SUMMARY

This report summarizes the annual 2021 mechanical integrity and reservoir pressure testing performed on the TM Deer Park Services LLC (TMDPS) waste disposal well, WDW-422, at the Deer Park facility. The mechanical integrity and reservoir pressure testing was conducted to meet the requirements and guidelines of the Texas Commission on Environmental Quality (TCEQ) and the U.S. Environmental Protection Agency Region 6 (USEPA), as well as the specific permit conditions for WDW-422. Testing activities were conducted June 7 and 8, 2021.

Wireline services were provided by Coastal Wireline Services, Inc. (CWS) from Pearland, Texas. The TMDPS site representatives were Mr. Kirk Edwards and Mrs. Christina Perez. Site activities were coordinated and supervised by Mr. Mike Johnson of Strata Technologies, LLC. The certification of the testing operations is included in Appendix A. A chronological summary of activities is included in Appendix B. The detailed procedure, along with TCEQ correspondence, is included in Appendix C.

The mechanical integrity test (MIT) included an annulus pressure test (APT) and a radioactive tracer (RAT) survey. The MIT results indicated successful demonstration of annular and external integrity. The reservoir pressure testing included an injection/falloff test, static bottom-hole pressure measurement and a wellbore pressure gradient survey. The falloff test data analysis indicates that a valid pressure falloff test dataset was obtained.

All depths in this report are referenced to the original Kelly bushing (KB) elevation, which is 19 feet above ground level for WDW-422. The current construction schematic for WDW-422 is included as Figure 1-1.

2.0 MECHANICAL INTEGRITY AND RESERVOIR PRESSURE TESTING

This section discusses the MIT and reservoir pressure test for WDW-422. MIT activities for WDW-422 were conducted June 8, 2021 and consisted of an APT and a RAT survey. The MIT and reservoir testing procedures for WDW-422 are included in Appendix C.

2.1 Annulus Pressure Test

The 2021 annual APT for WDW-422 was conducted on June 8, 2021. The well had been shut in since 10:03 A.M. on June 7, 2021 at the start of the pressure falloff test. To initiate the APT, the well annulus was pressurized to approximately 1,140 psia and then isolated from the annulus pressurization system.

The official APT was initiated at 9:30 A.M. on June 8, 2021 with 1,139.60 psia being recorded. The well annulus pressure was continuously monitored and recorded for thirty minutes. At the end of the thirty-minute test period, the annulus pressure was 1,140.95 psig. The pressure increase of 1.35 psi equates to a 0.12% increase during the test period and is well below the TCEQ's allowable five percent range, thus demonstrating annular integrity in WDW-422.

The APT data for WDW-422 is presented in Appendix D, along with the calibration certificate for the Calscan Hawk 9000, serial number (SN) 6042 pressure transducer used to record the test. A plot of the annulus pressure versus time for WDW-422 is presented in Figure 2-1.

2.2 Radioactive Tracer Survey

The RAT survey for WDW-422 was performed on June 8, 2021. The CWS RAT tools were picked up and run in the well. A casing collar locator (CCL) tool correlation strip was logged to tie-in depths to the CWS RAT survey log of August 2020. A gamma ray (GR) statistical check was then performed at 7,216 feet (20 feet above the top of the perforations). A second GR statistical check was then performed at 6,541 feet (10 feet above the packer). The top of well fill was tagged at 7,356 feet and an initial GR base

log was run from 7,356 to 6,300 feet. There was no flow to the well during the statistical checks or base log.

Injection was established at a rate of 60 gallons per minute (gpm) and 0 psi using fresh water. The RAT tool was positioned at 6,300 feet and a slug of Iodine-131 radioactive tracer material (RA material) was ejected. A series of four overlapping logging passes were made, profiling and tracking the movement of the slug moving downward into the perforations within the permitted injection interval.

The injection rate was confirmed at 60 gpm and 0 psi and the RAT tool was repositioned at 6,300 feet. A second slug of RA material was ejected and a series of four overlapping logging passes were made, profiling and tracking the movement of the slug moving downward into the perforations within the permitted injection interval. Results of the two moving surveys indicated all fluids were flowing down the tubing and casing and exiting the wellbore within the permitted injection interval. All RA material was observed to be moving into the permitted injection interval.

The RAT tool was then positioned with the lower detector at 7,216 feet, which is 20 feet above the perforated interval in WDW-422. The injection rate was increased to 120 gpm on vacuum using dilute brine water. With the tools held stationary at 7,216 feet, a third slug of RA material was ejected and a 17-minute time drive survey was recorded. The stationary time-drive survey was then repeated with a fourth slug released at 7,216 feet and an injection rate of 120 gpm and no surface injection pressure. No indication of upward vertical fluid movement was indicated during the two time drive surveys.

Injection into WDW-422 was ceased, and a final GR base log was run from 7,356 to 6,300 feet. The initial and final base log were compared and appeared virtually identical. A copy of the CWS RAT log is presented in Appendix E.

2.3 Reservoir Pressure Testing

The 2021 reservoir pressure testing for WDW-422 included an injection/falloff test, a static bottom-hole pressure measurement, and a static wellbore pressure gradient survey. Injection into WDW-422 had been initiated at 7:15 A.M., June 5, 2021, and maintained at a rate of approximately 75 gpm. There was no offset injection interference during the injection/falloff test.

CWS mobilized its wireline unit and equipment on June 7, 2021, and a gauge tool string, consisting of a Calscan Badger surface readout (SRO) gauge, serial number (SN) 91334 and memory readout (MRO) gauge were rigged up. The tool string was run into the well while injection was maintained at approximately 75 gpm.

Injection Pressure Monitoring

The tool string was hung off with the SRO at 7,216 feet and the injection pressure and temperature were monitored and recorded for approximately 1.02 hours with a final injection pressure of 3,245.22 psia being recorded. The injection pressure data is included in Appendix F, along with the calibration certificate for the SRO.

A Cartesian plot of the injection pressure versus time is included as Figure 2-2. A summary of the measured specific gravity and fluid viscosity of the injected fluid samples obtained during the pre-test and test period for WDW-422 are included in Appendix G.

Reservoir Pressure Falloff Test

WDW-422 was shut in to begin the reservoir pressure falloff test at 10:03 A.M. on June 7, 2021, after a total injection period of 50.80 hours. The falloff pressure was monitored and recorded for 22.01 hours with a final recorded pressure of 3,190.45 psia. The falloff pressure data for WDW-422 are presented in Appendix F. Figure 2-3 shows the Cartesian plot of the falloff pressure data.

Static Bottom-Hole Pressure Measurement and Wellbore Gradient Survey

During the final hour of the pressure falloff test, the bottom-hole pressure remained nearly constant, decreasing only 0.03 psi thus yielding a valid static bottom-hole pressure measurement of 3,190.45 psia.

At the conclusion of the falloff test on WDW-422 a static wellbore gradient survey was performed, which yielded an average static gradient of 0.466 psi per foot. Results of the static gradient survey measurements are presented in the table below.

Depth (feet)	Pressure (psia)	Step Gradient (psi/ft)	Cum Gradient (psi/ft)
400	14.74	Fluid level	
1000	279.33	0.441	0.441
2000	749.48	0.470	0.459
3000	1216.84	0.467	0.462
4000	1686.33	0.469	0.464
5000	2153.22	0.467	0.465
6000	2624.00	0.471	0.466
7000	3089.81	0.466	0.466
7216	3,190.45	0.466	0.466

2.4 Reservoir Pressure Falloff Test Analysis

The pressure falloff test data were analyzed using TRANS II Transient Analysis Software and serves to fulfill the requirements of the USEPA Region 6 guidelines. The input parameters and analysis results for the reservoir pressure falloff test for WDW-422 are presented in Table 2-1.

Reservoir Parameters

The reservoir parameters used in the analysis of the WDW-422 falloff data are the same as were used for the initial reservoir testing after completion. The input parameters are as follows:

μ = formation fluid viscosity = 0.545 centipoise (cp) @ 162 °F

ϕ = porosity = 0.296

C_t = total system compressibility = 6.0×10^{-6} psi⁻¹

B = formation volume factor = 1.0 rvb/stb

r_w = wellbore radius = 0.5104 feet

h = justified interval thickness = 94 feet

V = cumulative injected volume = 36,650,420 gallons (thru 5/31/21)

Calculated Test Data

Figure 2-4 is a diagnostic plot of the falloff test for WDW-422. Figure 2-5 is a semi-log plot of the falloff test. Figure 2-6 is the expanded semi-log plot of the falloff test, showing the semi-log line from which the slope and other analytical parameters were obtained. The TRANS II line results for the semi-log plot yield a slope (m) of -2.0144 psi/cycle.

Transmissibility

With the slope known, the transmissibility of the formation can be calculated from the following equation:

$$\text{Transmissibility} = kh/\mu = (162.6qB)/m, \text{ millidarcy-feet}/\text{cp} (\text{md-ft}/\text{cp})$$

where the previously undefined parameters are:

k = permeability, millidarcies (md)

q = injection rate, barrels per day (bbl/d)

$$= (-75 \text{ gpm})/(42 \text{ gal/barrel}) \times 1,440 \text{ min/day}$$

$$= -2,571.43 \text{ bbl/d}$$

Solving for transmissibility the result is:

$$kh/\mu = 207,566 \text{ md-ft}/\text{cp}$$

Permeability

With the value of transmissibility known the equation can be rearranged to solve for permeability (k) as follows:

$$k = (\text{transmissibility}) * (\mu/h), \text{ millidarcies (md)}$$

Solving for permeability, the result is;

$$k = 1,203 \text{ md}$$

Skin Factor

The skin factor (s) is the measurement of the completion condition of the well. A positive value for the skin factor is an indicator of near wellbore impact impeding flow.

The skin factor can be calculated from the following equation:

$$s = 1.1513 \{ [(P_{1\text{hr}} - P_{wf})/m] - \log[(kt_p)/((t_p+1) \phi \mu C_t r_w^2)] + 3.23 \}, \text{ dimensionless}$$

where the previously undefined parameters are,

$P_{1\text{hr}}$ = pressure intercept along the semilog straight line at a shut-in of 1 hour, psi

$$= 3,192.92 \text{ psia}$$

P_{wf} = final injection pressure at shut-in = 3,245.22 psia

t_p = total injection time = 50.80 hours

Solving for skin the result is:

$$s = +22.47$$

Skin Pressure Drop

The pressure correction for wellbore skin effects (ΔP_{skin}) can be calculated from the following equation:

$$\Delta P_{\text{skin}} = |0.868 m s|, \text{ psi}$$

Solving for ΔP_{skin} the result is:

$$\Delta P_{\text{skin}} = 39.29 \text{ psi}$$

Waste Plume Radius

The radial distance to the waste front can be calculated from the following equation:

$$r_{\text{waste plume}} = ((0.13368 V)/(\pi h \phi))^{1/2}, \text{ feet}$$

Solving for the radial distance to the waste front the result is;

$$r_{\text{waste plume}} = 237 \text{ feet}$$

Radius of Investigation

The radius of investigation (r_i) is the distance the pressure transient has moved into a formation following a rate change in a well. The radius of investigation can be calculated from the following equation:

$$r_i = ((k t)/(948 \phi \mu C_t))^{1/2}, \text{ feet}$$

where the previously undefined parameter is,

t = duration of falloff test = 22.01 hours

Solving for the radius of investigation the result is:

$$r_i = 5,373 \text{ feet}$$

Time to Waste Front

The time necessary for a pressure transient to exit the waste front (t_w) can be calculated from the following equation:

$$t_w = (126.73 \mu C_t V)/(\pi k h), \text{ hours}$$

Solving for the time to exit the waste front the result is:

$$t_w = 0.043 \text{ hours}$$

From the line results for TRANS II, the start of the radial flow period is 1 hour. Therefore the use of the formation fluid viscosity in the calculations is verified.

Reservoir Injection Pressure Corrected for Skin Effects

The final flowing bottomhole pressure (P_{wf}) measured at 7,216 feet during the test was 3,245.22 psia. The adjusted flowing bottomhole pressure (P_{wfa}) can be calculated from the following equation:

$$P_{wfa} = P_{wf} - \Delta P_{skin}, \text{ psia}$$

Solving for the adjusted flowing bottomhole pressure the result is:

$$P_{wfa} = 3,205.93 \text{ psia}$$

Falloff Test Simulation

A simulated falloff test was constructed using the analytically-derived characteristics (permeability, skin, wellbore storage) from the semi-log analysis conducted above. The TRANS II software was used to construct the simulations. Figure 2-7 is a Cartesian plot of the simulated and measured pressure falloff tests data. Figure 2-8 is a log-log diagnostic plot with simulation of the falloff test for WDW-422. Figure 2-9 is a semi-log plot with simulation of the falloff test. The results of the simulation, when compared with the actual data, verify the falloff test analysis.

3.0 NO-MIGRATION PETITION MODEL COMPARISONS

This section compares the pressure recorded during the falloff testing and the transmissibility determined from the falloff test data analysis to those used in the current “No-Migration” petition demonstration. Figure 3-1 is an open hole log strip of the completion interval in WDW-422.

3.1 Comparison of Bottomhole Pressure

The original static bottomhole pressure was measured in WDW-422 on May 6, 2018 with a pressure of 3,185.11 psia at a depth of 7,216 feet KB. The static bottomhole pressure measured at the end of the falloff test in 2021 was 3,190.45 psia or only 5.34 psi greater than the original. The flowing bottomhole pressure corrected for skin is 3,205.93 psia or only 20.82 psia greater than the original static bottomhole pressure. The recently approved 2019 petition submittal predicts static bottomhole pressure at the end of the operational life (2030) for an infinite acting centroid facility well reservoir case of 1,087.8 psi above the original bottomhole pressure for WDW-422. The 2021 measured pressures are significantly lower than that predicted.

3.2 Comparison of Transmissibility

The recently approved 2019 petition submittal used a transmissibility of 36,402 md-ft/ μ for the pressure model and a transmissibility of 373,852 md-ft/ μ for the plume model. The value for transmissibility derived from the 2021 analysis for WDW-422 is 207,566 md-ft/ μ . The transmissibility derived from the 2021 analysis is between the modeled values demonstrating compliance with the petition model.

TABLES

TABLE 2-1
2021 WDW-422 RESERVOIR PRESSURE FALLOFF TEST SUMMARY

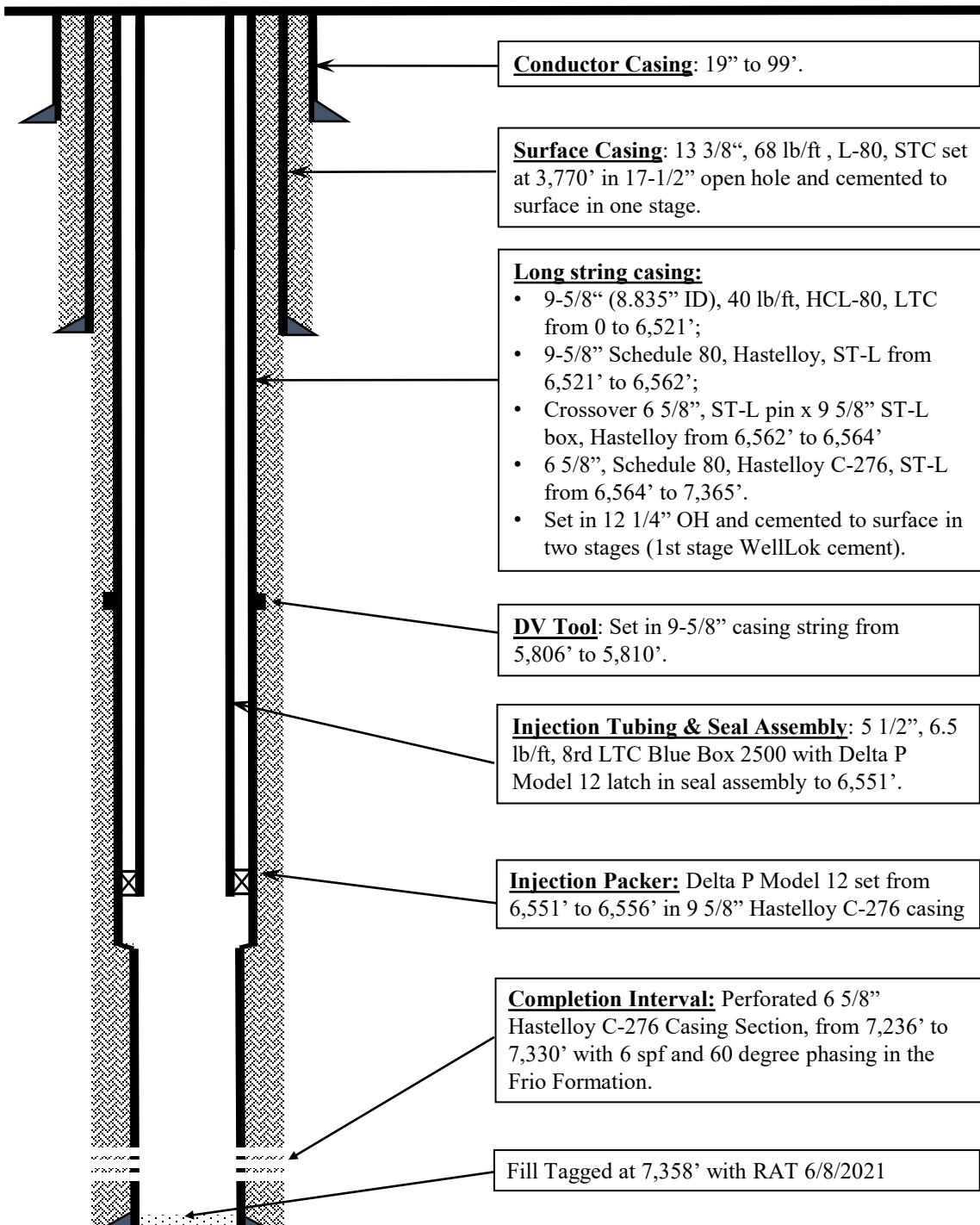
<u>Facility and Reservoir Data</u>	
Company name and Address	TM Deer Park Services LLC 2525 Independence Pkwy S, Deer Park, TX 77536
Test Well Name(s) and Location	WDW-422 at TM Deer Park Services LLC Facility
Contact Person	Kirk Edwards (281) 930-2543
Wellbore radius	0.5104 feet
Completion Interval Depths	7,236 to 7,330 feet
Type of Completion	Perforated
Date of Test	June 7-8, 2021
Stabilization prior to testing	N/A
Location of shut-in valve	Flowline Valve
Formation fluid viscosity	0.545 centipoise (cp)
Porosity	0.296
Total Compressibility	6.0×10^{-6} psi ⁻¹
Formation volume factor	1.0
Justified interval thickness	94 feet
Cumulative injected volume	36,650,420 gallons (thru 5/31/21)
<u>Test Period Data</u>	
Gauge type	SRO (0 -6,000 psi)
Gauge sensitivity	0.01 psi at full scale
Gauge depth	7,216 feet
Type of test fluid	Dilute Brine water
Type pump used	Plant injection pump
Time of injection period	50.80 hrs
Final injection rate	75 gpm
Final injection pressure	3,245.22 psia
Total shut-in time	22.01 hours
Final shut-in pressure	3,190.45 psia
<u>Calculated Test Data</u>	
Horner Slope, m	-2.0144
k	1,203 md
kh	113,123 md-ft
kh/uB	207,566 md-ft/cp
Skin	22.47
ΔP Skin	39.29 psi
Radius Invest	5,373 feet
Start Radial Flow	1 hour

TABLE 3-1
HISTORICAL STATIC BOTTOM-HOLE PRESSURES FOR WDW-422

DATE	Static BHP (psia) at 7,216 feet
5/6/2018	3,185.11
8/13/2019	3,189.24
8/11/2020	3,185.35
7/8/2021	3,190.45

FIGURES

Figure 1-1
WDW-422
TM Deer Park Services LLC
Deer Park, Texas



NOTE: All Depths Referenced to KB 19' above GL

Permitted Injection Zone: 5,049' to 7,369'
 Permitted Injection Interval: 5,549' to 7,369'

2021 WDW-422
Annulus Pressure Test June 8, 2021

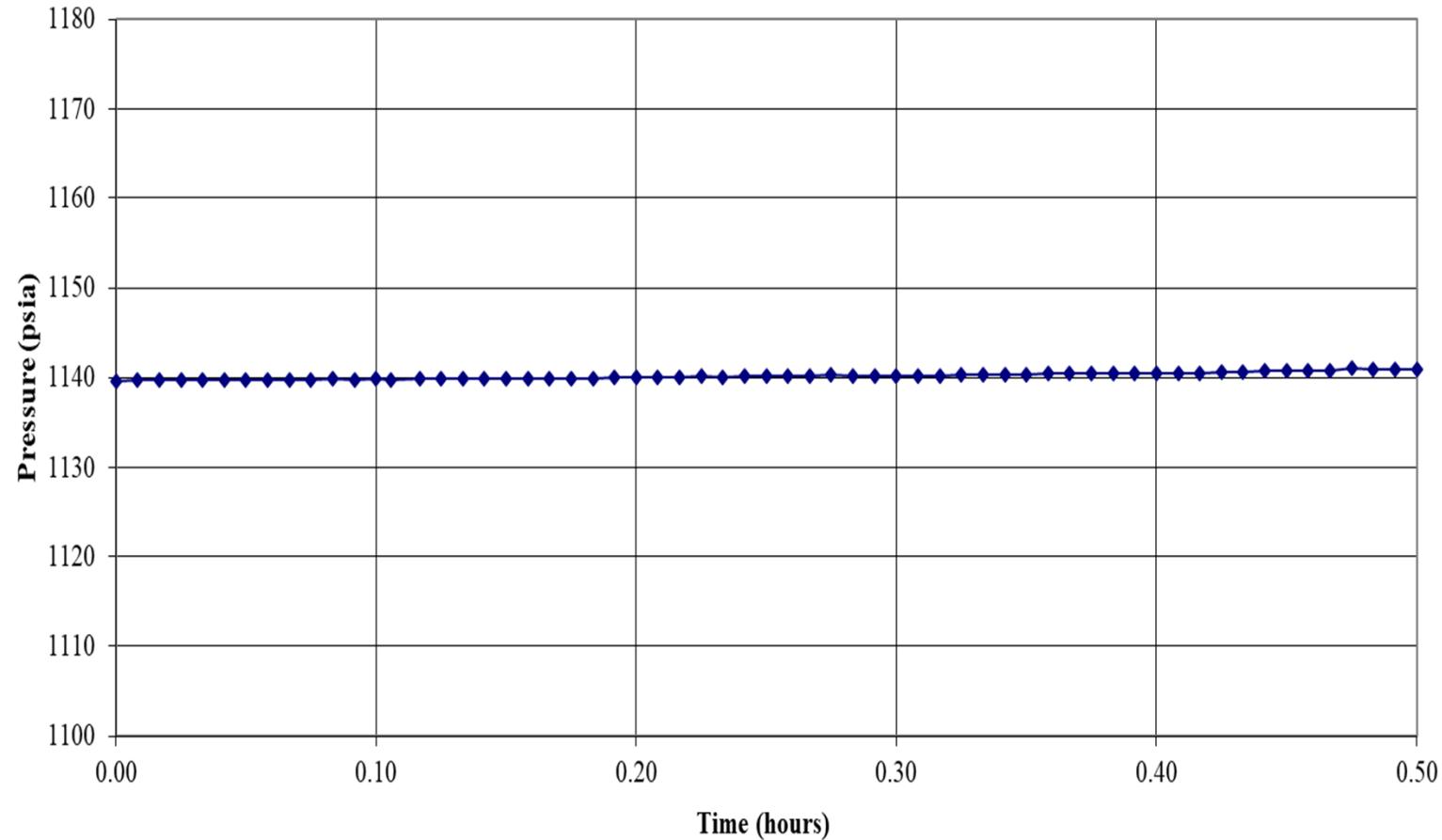


FIGURE 2-1



2021 WDW-422
Injection Pressure Prior to Falloff

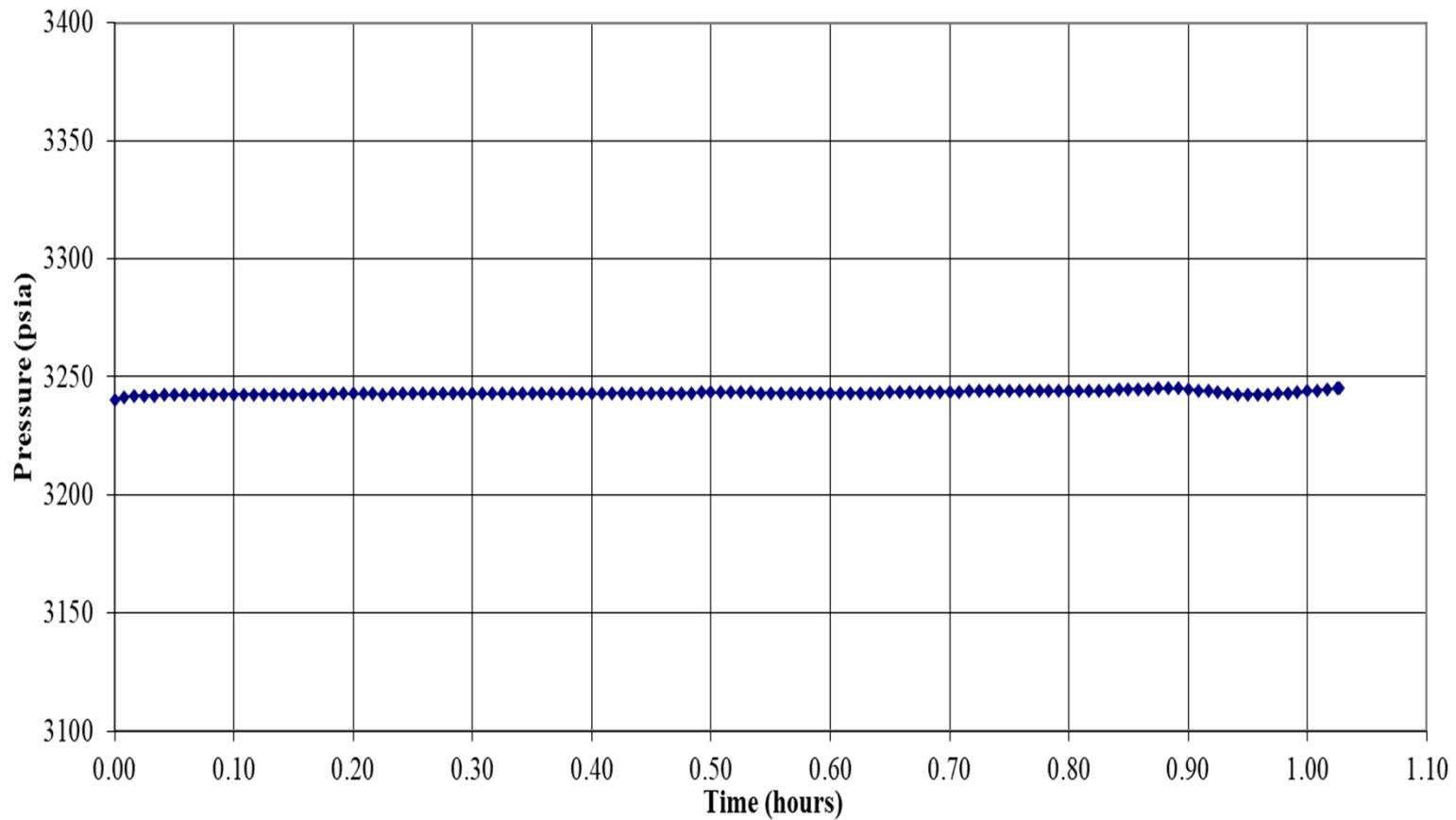


FIGURE 2-2

2021 WDW-422 Falloff Test

Cartesian Plot

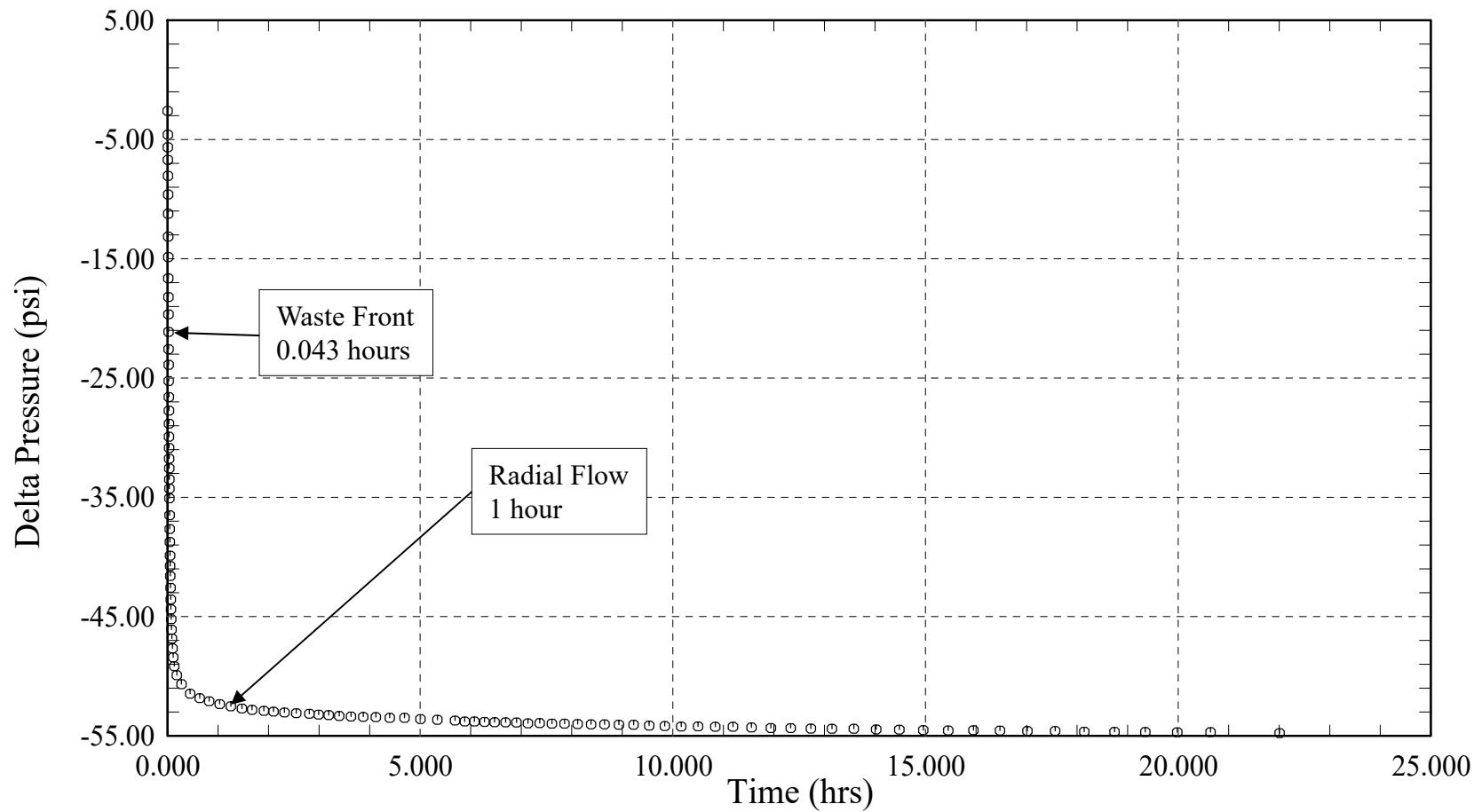


FIGURE 2-3

2021 WDW-422 Falloff Test

Log-Log Diagnostic Plot

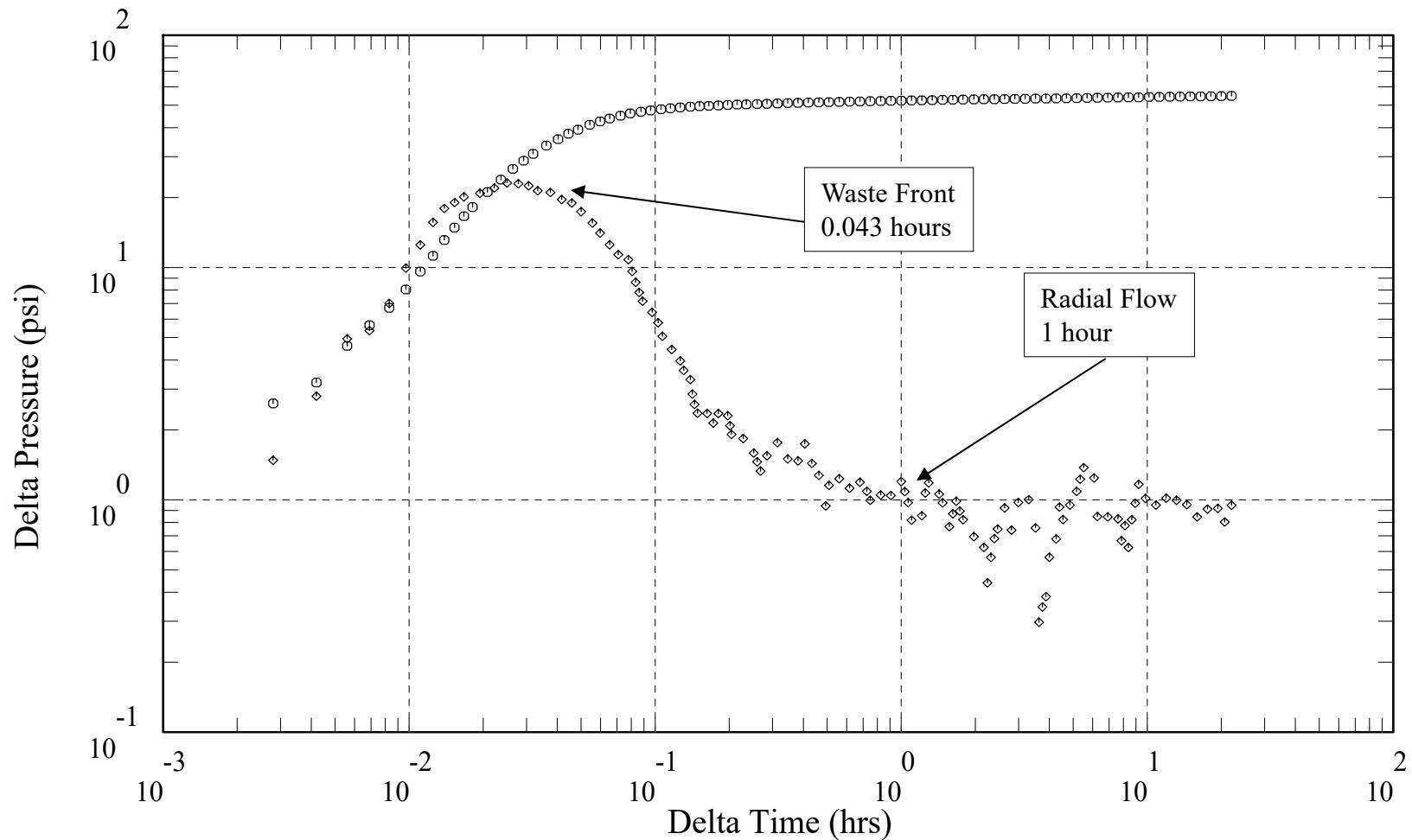


FIGURE 2-4

2021 WDW-422 Falloff Test

Semi-Log Plot

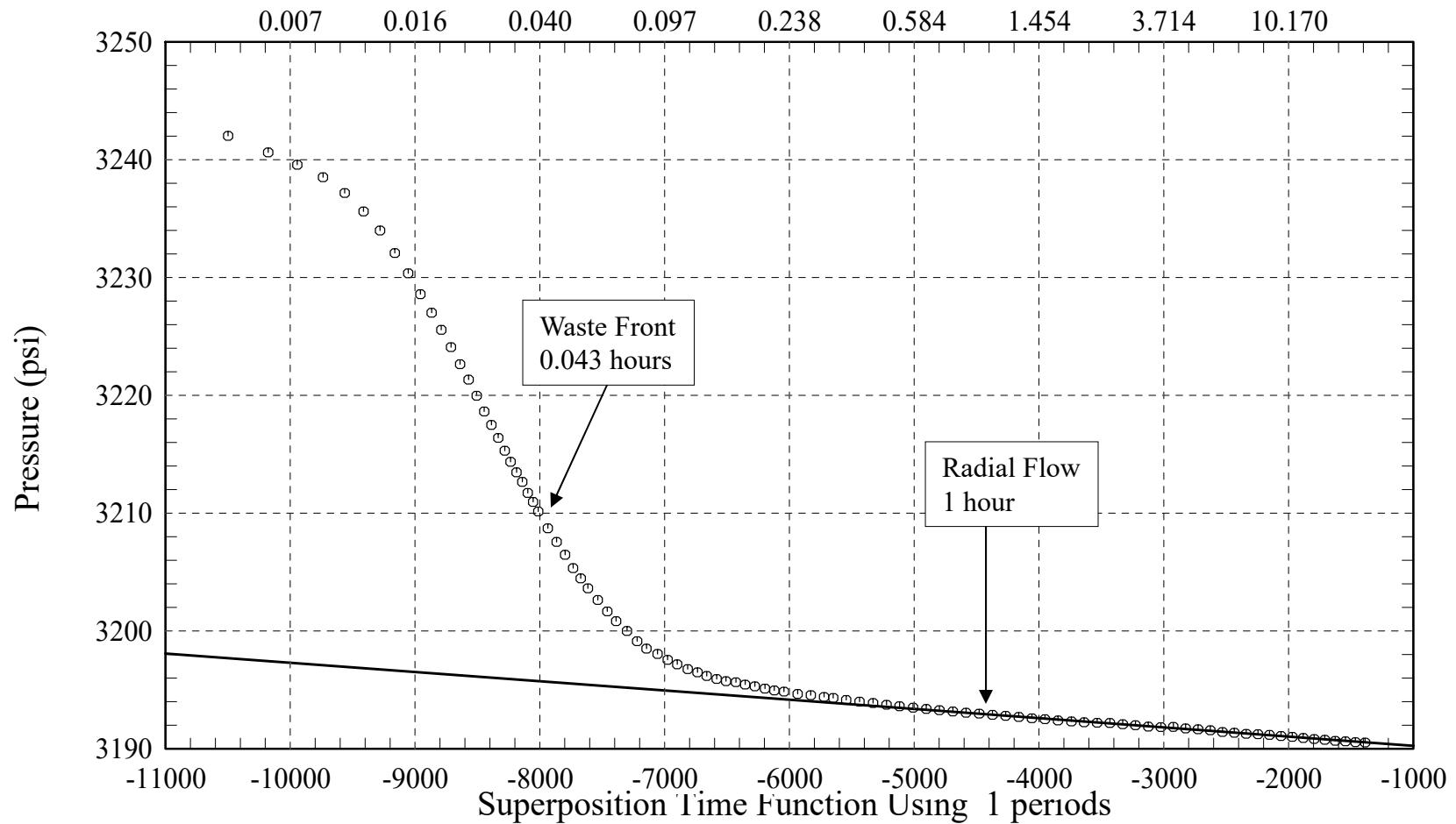


FIGURE 2-5

2021 WDW-422 Falloff Test

Semi-Log Plot Expanded

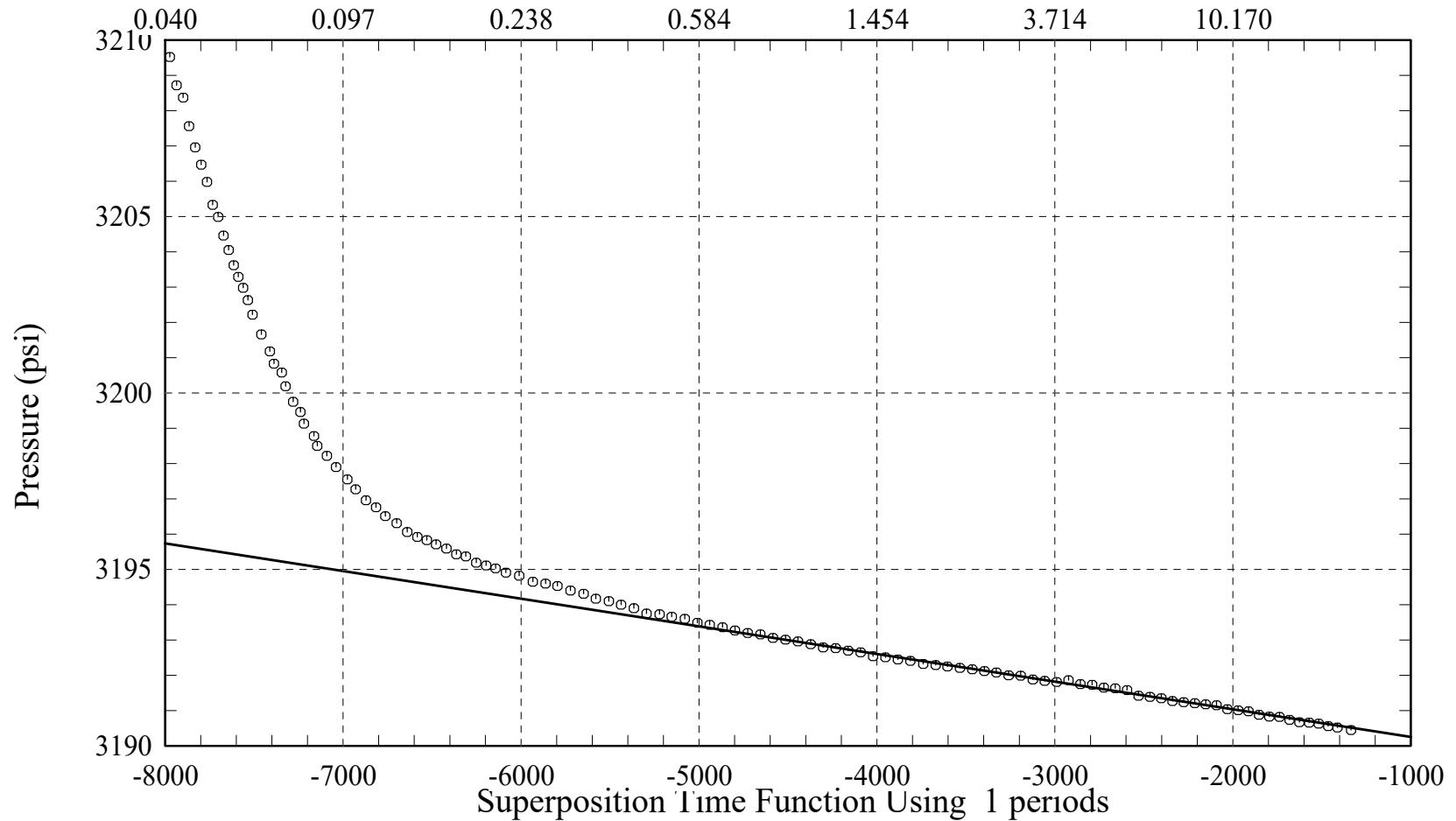
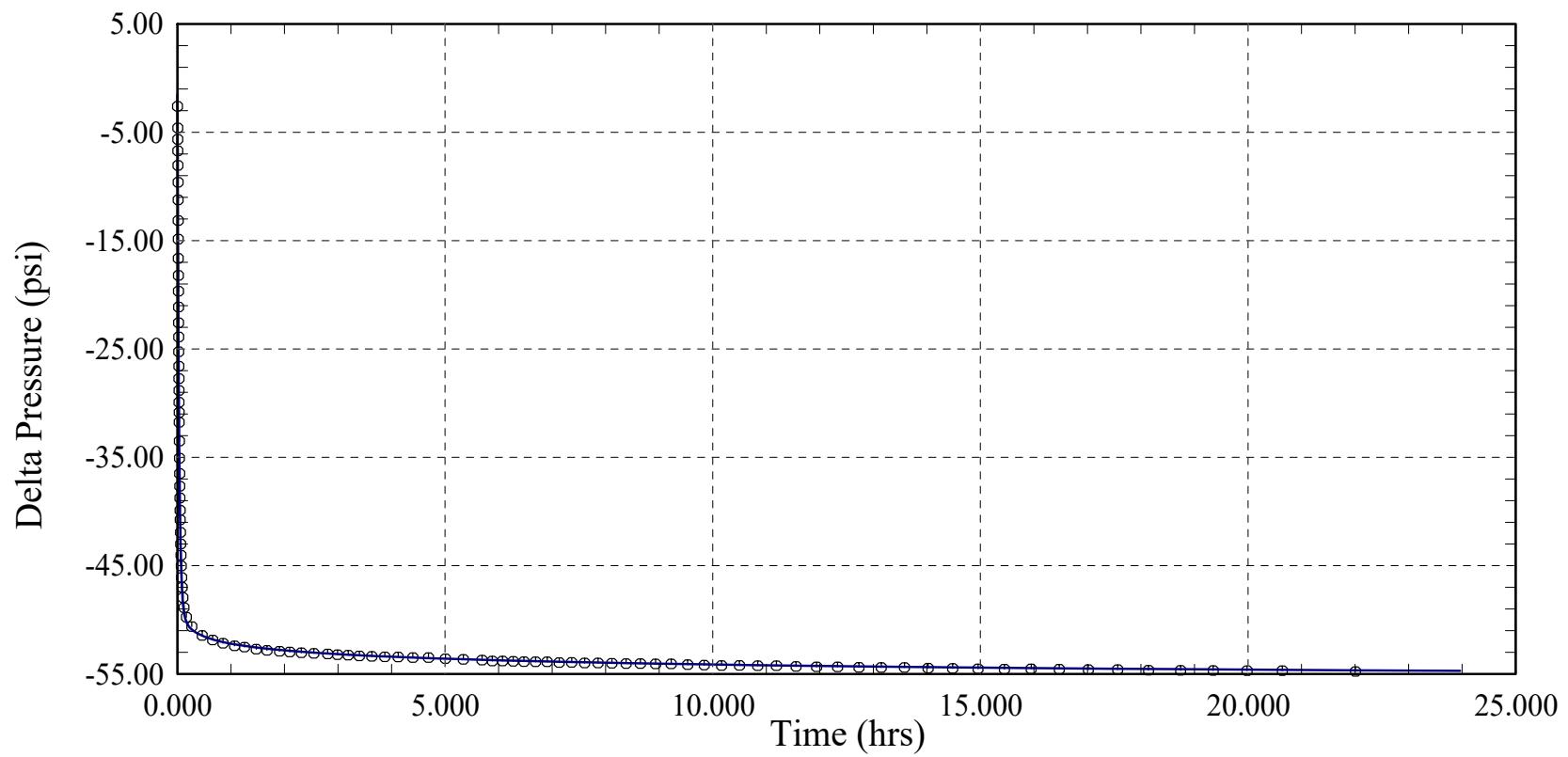


FIGURE 2-6

2021 WDW-422 Falloff Test

Cartesian Plot w/ Simulation



MODEL RESULTS

Constant Storage
C1 : 0.060 bbl/psi

Skin Model
Skin : 22.46

Homogeneous
k : 1203.430 md
Est Pi: 3189.5 psi

No Boundaries

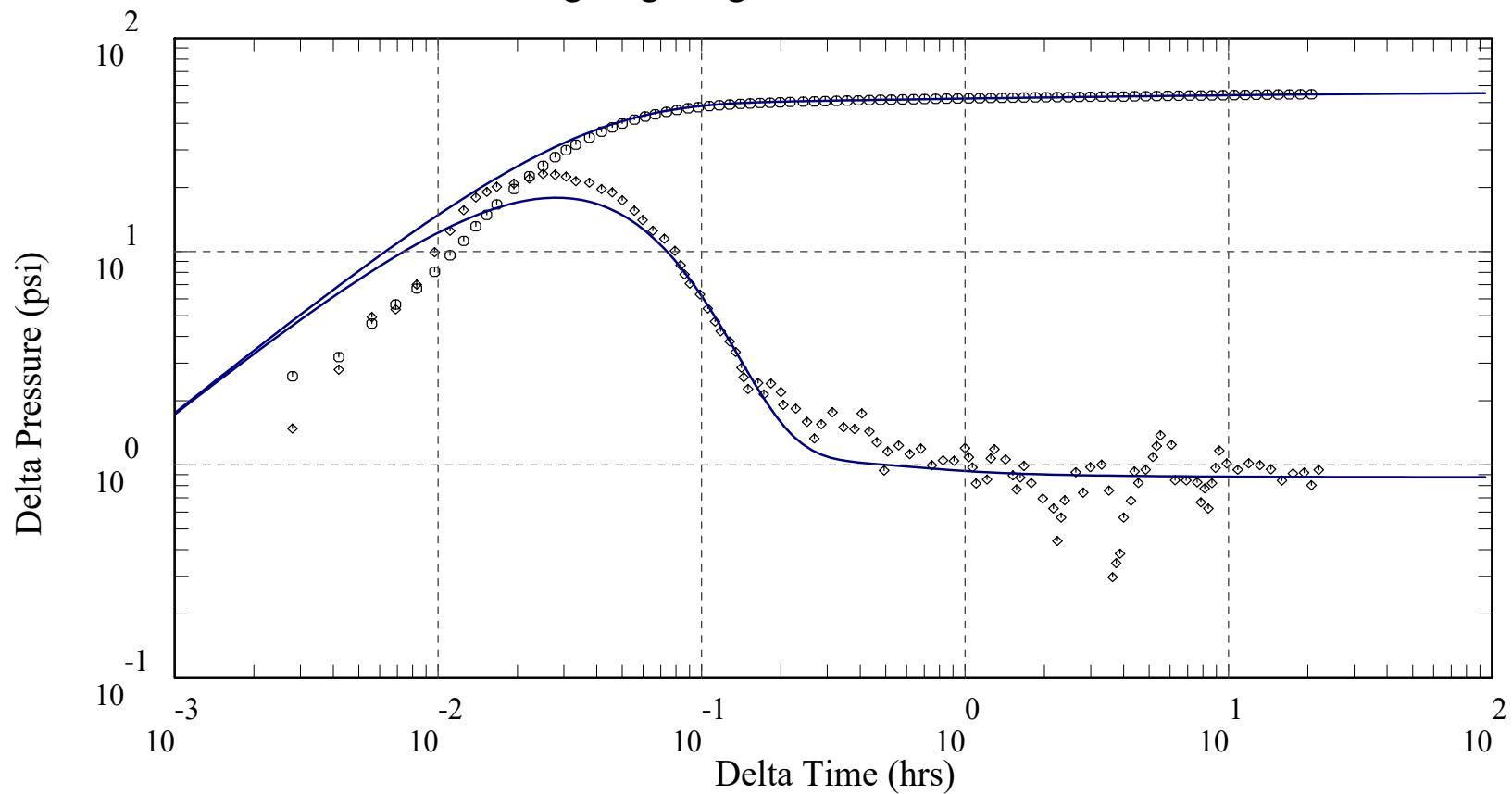
h : 94 ft
mu : 0.545 cp
phi : 29.6%
ct : 6.000E-06 l/psi
--- 0.510 ft

FIGURE 2-7



2021 WDW-422 Falloff Test

Log-Log Diagnostic Plot w/ Simulation



MODEL RESULTS

Constant Storage
C1 : 0.060 bbl/psi

Skin Model
Skin : 22.46

Homogeneous
k : 1203.430 md
Est Pi: 3189.5 psi

No Boundaries

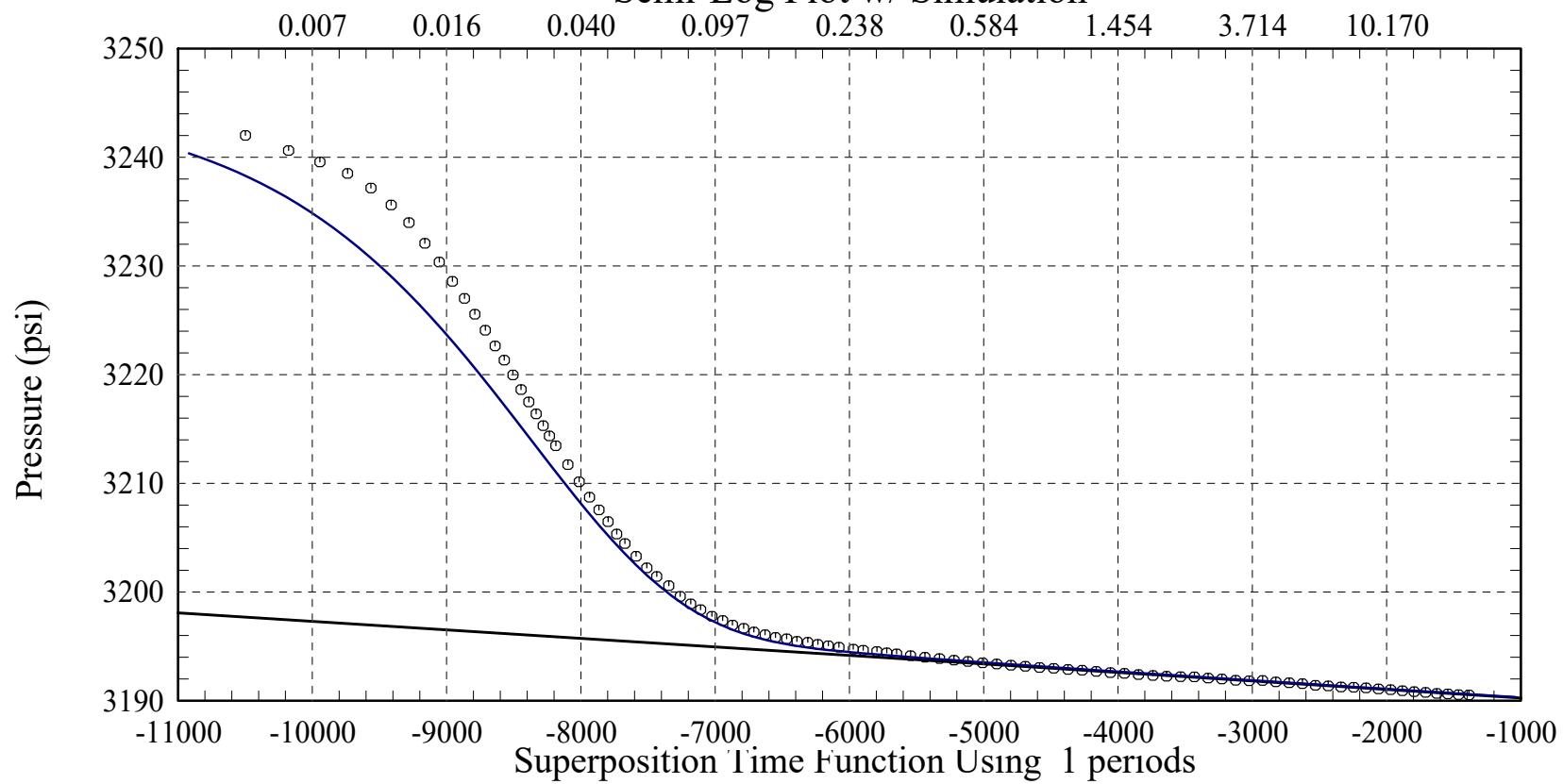
h : 94 ft
mu : 0.545 cp
phi : 29.6%
ct : 6.000E-06 l/psi

0.510 Δt

FIGURE 2-8

2021 WDW-422 Falloff Test

Semi-Log Plot w/ Simulation

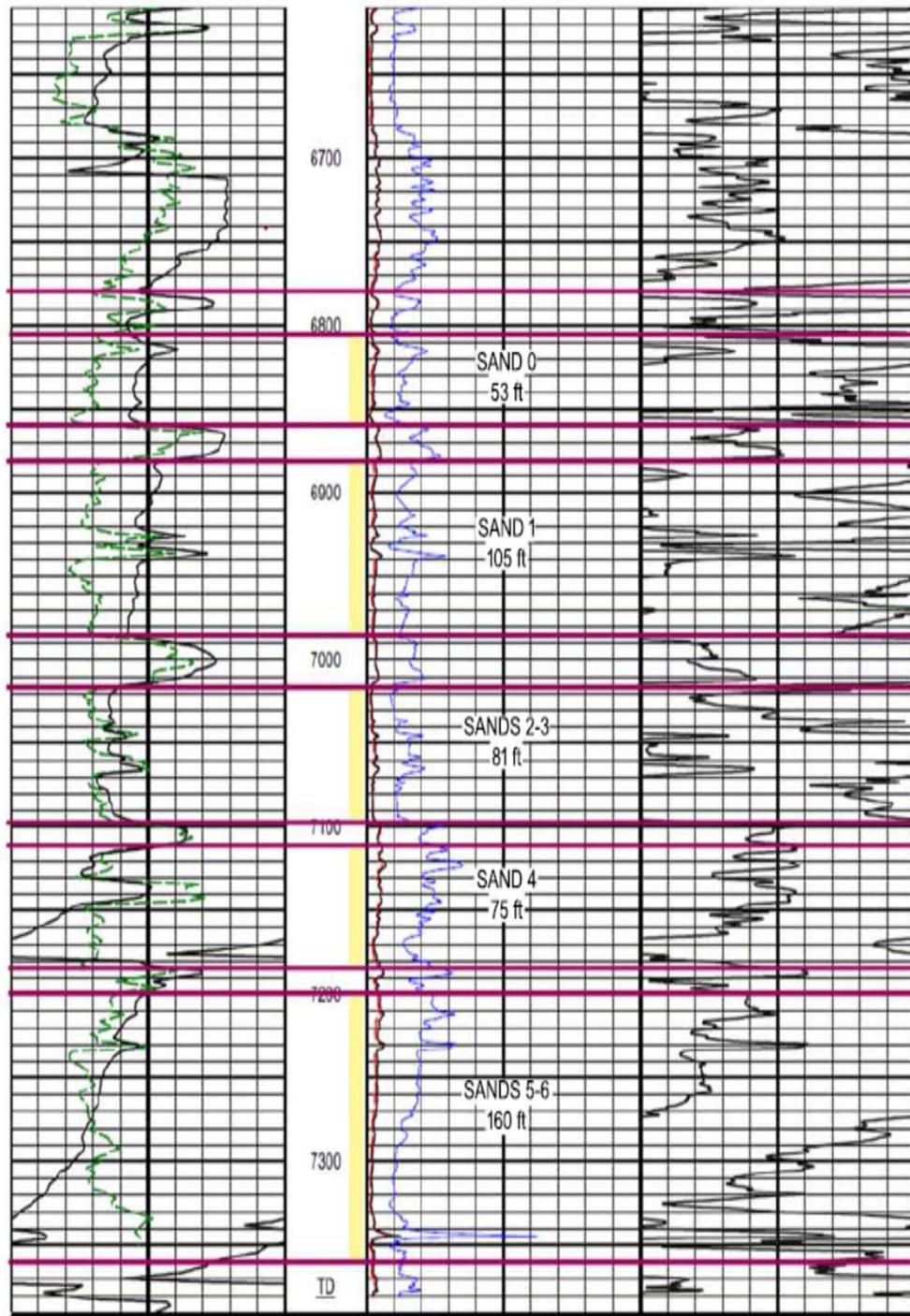


MODEL RESULTS

Constant Storage C1 : 0.060 bbl/psi	Skin Model Skin : 22.46	Homogeneous k : 1203.430 md Est Pi: 3189.5 psi	No Boundaries	h : 94 ft mu : 0.545 cp phi : 29.6% ct : 6.000E-06 l/psi ... 0.510
--	----------------------------	--	---------------	--

FIGURE 2-9

TM Deer Park Services LLC
Open Hole Log Strip



LOWER Frio SAND IDENTIFICATION
WDW-422



FIGURE 3-1

APPENDIX A

APPENDIX A

CERTIFICATION

This report details the 2021 annual mechanical integrity testing and ambient pressure monitoring of WDW-422 at the TM Deer Park Services LLC facility, located in Deer Park, Texas during the period of June 7 through 8, 2021.

I, Gary P. Rogers, as the preparer of this report, certify that all test data and facts stated in this report are true and correct to the best of my knowledge.



Gary P. Rogers,
Project Manager

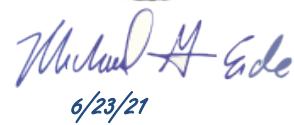
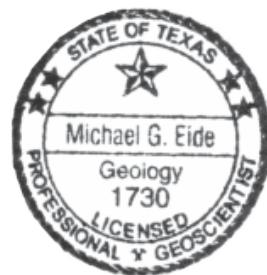
REPORT SUPERVISOR CERTIFICATION

I, Michael Eide, have supervised and reviewed this report on behalf of Strata Technologies, LLC and TM Deer Park Services LLC and submit that the information included is, to the best of my knowledge and belief, true, accurate, and complete. I certify that this document and all attachments were prepared by qualified personnel and that the information contained herein was properly gathered and evaluated in accordance with industry and professional standards.



Michael G. Eide, P.G.
Senior Geologist
Texas P.G. No. 1730

Weegar-Eide & Associates, LLC
F - 50015



6/23/21

APPENDIX B

P.O. BOX 5222, Austin, TX 78763
TELEPHONE: (512) 914-7632 or 8590

PAGE 1 OF 1

P.O. BOX 5222, Austin, TX 78763
TELEPHONE: (512) 914-7632 or 8590

PAGE 1 OF 1

APPENDIX C



TM Deer Park Services LLC

TRANSMITTED VIA ELECTRONIC MAIL

May 3, 2021

Tim Perdue
Waste Section Manager
TCEQ Region 14
6300 Ocean Drive, Ste. 1200
NRC Bldg, Unit 5839
Corpus Christi, Texas 78412

Re: Proposed Procedures for 2021 Annual Mechanical Integrity and Reservoir Pressure Testing
TM Deer Park Services LLC
WDW-422

Dear Mr. Perdue:

Enclosed are proposed procedures for the 2021 mechanical integrity and reservoir pressure testing (MIT) of WDW-422 at the TM Deer Park Services LLC (TMDP) facility, along with the current wellbore schematic. The proposed testing procedures include an annulus pressure test, a radioactive tracer survey, and reservoir pressure testing. The last five-year temperature survey for WDW-422 was performed on May 5, 2018.

The proposed testing program is scheduled to begin Monday, June 7, 2021, and the MIT is tentatively scheduled for June 8th.

Your office will be contacted if there are any changes in the proposed testing program or schedule. If you have any questions concerning this submittal, please contact me at 281-930-2593.

Sincerely,

Christina Perez
Director - EHS

Enclosures

cc: Richard Heitzenrater, UIC Compliance Team, TCEQ Region 14, Corpus Christi, Texas
Elizabeth Murphey, UIC Environmental Investigator, TCEQ Region 14, Corpus Christi, Texas
Ken Johnson, UIC Land Ban Coordinator, US EPA Region 6, Dallas, Texas
Kirk Edwards, VP Operations, TMDP, Deer Park, Texas
Gary Rogers, Operations Manager, Strata Technologies, LLC, Austin, Texas

Procedures For
2021 Annual Mechanical Integrity and Reservoir Pressure Testing of
WDW-422

Prepared For
TM Deer Park Services LLC

June 7-8, 2021

Initiate injection into WDW-422 at a constant rate beginning 48 hours prior to equipment mobilization and maintain that rate until the reservoir pressure fall-off test is initiated. Notify the nearby Vopak facility of upcoming testing. Collect injection fluid samples at least once every four hours during the pre-shut-in injection period for offsite analysis of specific gravity and viscosity.

I. Reservoir Pressure Testing (Day 1-2)

1. Mobilize wireline unit to well location. Place plastic sheeting beneath wireline unit, mast trailer and mast.
2. Make transition from injected waste fluid to non-waste dilute brine water or fresh water. Obtain sample of non-waste fluid and analyze for specific gravity and viscosity.
3. Rig up wireline unit and mast on well. Pick up tool string consisting of surface readout (SRO) and memory readout (MRO) gauges.
4. Obtain atmospheric readings. Rig up lubricator to well crown valve. Open well while maintaining injection at prescribed rate. Obtain surface injection pressure, if any.
5. Run in well with tool string while maintaining injection.
6. Position tool string with SRO at 7,216 feet. Monitor and record injection pressure for one hour, or until the injection pressure has stabilized.
7. Cease injection to initiate fall-off test. Close flowline valves near wellhead. Monitor reservoir pressure fall-off data for 12-18 hours, or until a field analysis of data indicates that a radial flow response has been obtained.
8. Pull gauge string out of well while making wellbore gradient survey stops at 1,000-foot intervals.
9. Lay down gauge string and perform MIT as detailed below.

II. Annulus Pressure Integrity Testing (Day 2)

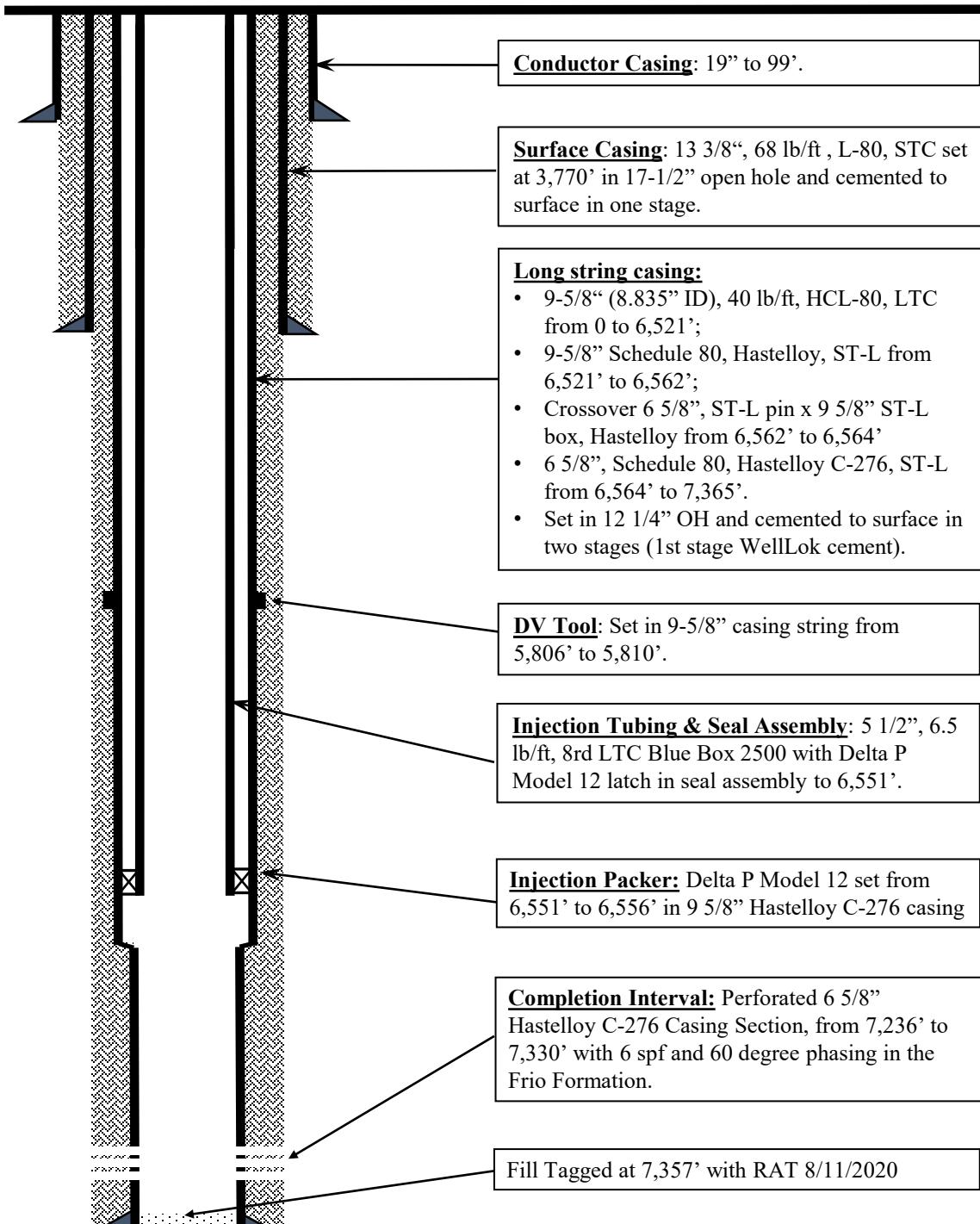
1. Assure that well has been shut in for at least 12 hours.
2. Using portable triplex pump, increase the well annulus pressure to at least 1,100 pounds per square inch gauge (psig).
3. Isolate well annulus from plant pressurization equipment and record annulus pressure for at least thirty minutes.
4. Evaluate results. A successful test is one in which the maximum annulus pressure change is within 5% of the initial test pressure. Re-connect well annulus to plant pressurization/monitoring equipment.

III. Radioactive Tracer Survey (Day 2)

1. Pick up radioactive tracer (RAT) survey tool configured with two gamma ray (GR) detectors, casing collar locator (CCL), and RAT ejector.
2. Assure that any well vacuum has been released. Rig up lubricator to well crown. Open well and run in hole with RAT tool. Correlate RAT tool depth with packer from 6,551 – 6,556 feet.
3. Tag and record depth to well bottom (top of fill). Pull pre-RAT GR/CCL survey to 6,351 feet (or 200 feet above log-indicated packer).
4. Make 5-minute statistical survey checks at 6,541 feet (or 10-feet above log-indicated packer) and at 7,216 feet (20 feet above top of perforations).
5. Pick up RAT tool to 6,300 feet (or at least 200 feet above log-indicated packer) and initiate injection at 30-50 gallons per minute (gpm) using the facility pumping system and non-waste dilute brine or fresh water.
6. Release RA slug and profile slug into injection interval. Assure that at least two RA peaks are encountered above the perforated interval.
7. Verify injection rate. Repeat steps 5 and 6.
8. Position RAT tool at 7,216 feet (20 feet above top of perforated interval). Increase the injection rate to 100 gpm, or average injection rate for the well.
9. Release a slug of RA material and hold the RAT tool stationary while logging in time drive for 15 minutes.
10. Verify injection rate. Repeat step 9.

11. Evaluate RAT survey results. Cease injection and run in hole to well bottom (top of fill). Pull post-RAT GR/CCL survey to 6,300 feet (or at least 200 feet above log-indicated packer signature).
12. Evaluate post-RAT GR/CCL survey. Dump RAT tool of remaining contents and pull out of well with wireline and logging tools.
13. Rig down wireline unit and mast trailer. Assure that well location is clean. Demobilize equipment.

Figure 1
WDW-422
TM Deer Park Services LP
Deer Park, Texas



NOTE: All Depths Referenced to KB 19' above GL

Permitted Injection Zone: 5,049' to 7,369'
 Permitted Injection Interval: 5,549' to 7,369'

APPENDIX D

Company: TM Deer Park Services**Start Date:** 06/08/21**Well:** WDW-422**Gauge:** Hawk 9000 SN6042**Field:** Deer Park**Gauge Depth:** Surface**Annulus Pressure Test**

REC #	DAY	REAL TIME	DT (HRS)	PRESSURE (PSIA)	TEMP. (DEG F)
1	1	9:30:00	0.0000	1139.60	90.8
2	1	9:30:30	0.0083	1139.71	91.0
3	1	9:31:00	0.0167	1139.75	91.4
4	1	9:31:30	0.0250	1139.78	91.7
5	1	9:32:00	0.0333	1139.68	92.1
6	1	9:32:30	0.0417	1139.76	92.5
7	1	9:33:00	0.0500	1139.71	92.9
8	1	9:33:30	0.0583	1139.70	93.2
9	1	9:34:00	0.0667	1139.74	93.5
10	1	9:34:30	0.0750	1139.75	93.9
11	1	9:35:00	0.0833	1139.82	94.3
12	1	9:35:30	0.0917	1139.78	94.6
13	1	9:36:00	0.1000	1139.88	94.9
14	1	9:36:20	0.1056	1139.80	95.0
15	1	9:37:00	0.1167	1139.86	95.3
16	1	9:37:30	0.1250	1139.84	95.6
17	1	9:38:00	0.1333	1139.88	95.8
18	1	9:38:30	0.1417	1139.90	96.1
19	1	9:39:00	0.1500	1139.90	96.4
20	1	9:39:30	0.1583	1139.95	96.7
21	1	9:40:00	0.1667	1139.92	96.9
22	1	9:40:30	0.1750	1139.95	97.0
23	1	9:41:00	0.1833	1139.93	96.8
24	1	9:41:30	0.1917	1140.00	96.4
25	1	9:42:00	0.2000	1139.99	96.3
26	1	9:42:30	0.2083	1140.01	96.3
27	1	9:43:00	0.2167	1140.04	96.3
28	1	9:43:30	0.2250	1140.17	96.4
29	1	9:44:00	0.2333	1140.10	96.6
30	1	9:44:30	0.2417	1140.12	96.8
31	1	9:45:00	0.2500	1140.21	97.1
32	1	9:45:30	0.2583	1140.19	97.2
33	1	9:46:00	0.2667	1140.24	97.3
34	1	9:46:30	0.2750	1140.34	97.4
35	1	9:47:00	0.2833	1140.20	97.3
36	1	9:47:30	0.2917	1140.20	97.2
37	1	9:48:00	0.3000	1140.25	97.0
38	1	9:48:30	0.3083	1140.23	96.8
39	1	9:49:00	0.3167	1140.26	96.6
40	1	9:49:30	0.3250	1140.30	96.3
41	1	9:50:00	0.3333	1140.28	96.1
42	1	9:50:30	0.3417	1140.33	95.9
43	1	9:51:00	0.3500	1140.30	95.8
44	1	9:51:30	0.3583	1140.46	95.9
45	1	9:52:00	0.3667	1140.47	96.1
46	1	9:52:30	0.3750	1140.47	96.2
47	1	9:53:00	0.3833	1140.51	96.4
48	1	9:53:30	0.3917	1140.49	96.4
49	1	9:54:00	0.4000	1140.46	96.4
50	1	9:54:30	0.4083	1140.50	96.3
51	1	9:55:00	0.4167	1140.55	96.3
52	1	9:55:30	0.4250	1140.59	96.0
53	1	9:56:00	0.4333	1140.66	95.8
54	1	9:56:30	0.4417	1140.75	95.6
55	1	9:57:00	0.4500	1140.77	95.4
56	1	9:57:30	0.4583	1140.79	95.5
57	1	9:58:00	0.4667	1140.80	95.4
58	1	9:58:30	0.4750	1141.00	95.6
59	1	9:59:00	0.4833	1140.92	95.9
60	1	9:59:30	0.4917	1140.94	96.0

Company: TM Deer Park Services **Start Date:** 06/08/21
Well: WDW-422 **Gauge:** Hawk 9000 SN6042
Field: Deer Park **Gauge Depth:** Surface

Annulus Pressure Test

REC #	DAY	REAL TIME	DT (HRS)	PRESSURE (PSIA)	TEMP. (DEG F)
61	1	10:00:00	0.5000	1140.95	96.3

Cal-scan Services Ltd.

4188-93 Street
Edmonton, Alberta, Canada
T6E 5P5
Phone: (780) 944-1377 Fax: (780) 944 - 1406

Calibration Certificate

Model :	Hawk 9000	Range :	6,000.00	psi
Serial Number :	6042	Last Cal. Date :	20-November-2020	

Specifications

Calibration Pressure Range: 0.00 6,000.00 psi

Calibration Temperature Range: -20.00 80.00 °C

Pressure:	Accuracy	± 1.4400 psi (0.024 %FS)
	Resolution	± 0.0180 psi (0.0003 %FS)

Temperature:	Accuracy	± 0.40 °C
	Resolution	± 0.001 °C

Calibration Summary

Pressure: Accuracy (maximum error) 0.53 psi

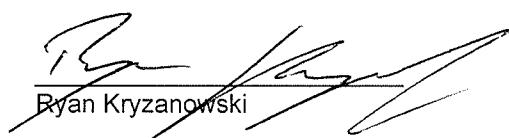
Temperature: Accuracy (maximum error) 0.11 °C

Traceability Statement

All working standards are traceable to national or internationally recognized standards.

Calibrated with Cal-Scan DWG # 4

Calibrated by:



Ryan Kryzanowski

APPENDIX E

COASTAL WIRELINE SERVICES, INC.

Texas Molecular
Waste Disposal Well 422
Deer Park Facility Facility
Deer Park, Texas
JUNE 08, 2021

RADIOACTIVE TRACER SURVEY

The two phases of this test included; 1) determining the flow through and from the tubing by ejecting a slug of radioactive material (Iodine-131 10mci) and monitoring the flow profile as it moves down the tubing and into the formation. 2) Testing the mechanical integrity of the casing, cement, and formation bond by positioning gamma-ray detector slightly above the point where the formation accepts fluid and monitoring the gamma radiation response from an ejected slug of radioactive material. A baseline gamma-ray log was run from 7356 feet to 6,300 feet (251 feet above top of packer assembly). The injection rate was 60 gpm for the profile runs and 120 gpm for the time drive surveys.

The first phase of this test incorporates the injection of radioactive slug at 6,300 feet (251 feet above top of packer assembly) and passing the detector through the radioactive material until it passes from the tubing and into the formation. The first slug gave an indication of leaving the packer at 6,551 feet and going into the formation below 7,232 feet. Made four (4) passes and chased slug down to 7,321 feet with a rate of 60 gpm. This portion of this test was repeated with four (4) passes and slug chased down to 7,324 feet with a rate of 60 gpm. Profile survey indicates that all fluid is going into injection interval at this time. No indication of any fluid migrating up hole behind pipe above 7,232 feet.

The second phase of this test involved setting lower detector at 7,216 feet (20 feet above top of perforations) and ejecting a slug of radioactive material at 7,205 feet and recorded on time drive for sixteen (16) minutes with an injection rate of 120 gpm. This portion of this test was repeated at 7,216 with a rate of 120 gpm for sixteen (16) minutes. Time drive survey indicates no fluid migrating up hole behind pipe at this time.

RADIOACTIVE TRACER SURVEY CONTINUE

A Base after survey gamma ray log was ran from 7,356 feet to 6,300 feet and compared to original base gamma ray log which indicated no residue of radioactive material above 7,232 feet in formation, casing, tubing, or packer.

Radioactive Tracer Survey was conducted by Kevin R Keener (Coastal Wireline Services, Inc.) and witnessed by Mr. William Johnson (Strata Technologies).

Sincerely



Kevin R Keener
Engineer C.W.S.

Coastal Wireline Services

3909 Halik Road - Pearland, Texas 77581 - Office 281-485-6548 Fax 281-485-1954

APPENDIX F

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Injection Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
1	1	9:01:30	0.0000	3240.38	96.82
2	1	9:02:00	0.0083	3241.50	96.90
3	1	9:02:30	0.0167	3242.03	96.93
4	1	9:03:00	0.0250	3242.13	96.95
5	1	9:03:30	0.0333	3242.19	96.97
6	1	9:04:00	0.0417	3242.24	96.98
7	1	9:04:30	0.0500	3242.29	97.00
8	1	9:05:00	0.0583	3242.32	97.01
9	1	9:05:30	0.0667	3242.36	97.02
10	1	9:06:00	0.0750	3242.48	97.02
11	1	9:06:30	0.0833	3242.50	97.02
12	1	9:07:00	0.0917	3242.53	97.03
13	1	9:07:30	0.1000	3242.58	97.04
14	1	9:08:00	0.1083	3242.62	97.05
15	1	9:08:30	0.1167	3242.64	97.06
16	1	9:09:00	0.1250	3242.64	97.06
17	1	9:09:30	0.1333	3242.66	97.07
18	1	9:10:00	0.1417	3242.65	97.07
19	1	9:10:30	0.1500	3242.68	97.07
20	1	9:11:00	0.1583	3242.70	97.08
21	1	9:11:30	0.1667	3242.73	97.08
22	1	9:12:00	0.1750	3242.74	97.09
23	1	9:12:30	0.1833	3242.77	97.10
24	1	9:13:00	0.1917	3242.78	97.10
25	1	9:13:30	0.2000	3242.80	97.11
26	1	9:14:00	0.2083	3242.78	97.11
27	1	9:14:30	0.2167	3242.81	97.11
28	1	9:15:00	0.2250	3242.76	97.12
29	1	9:15:30	0.2333	3242.77	97.12
30	1	9:16:00	0.2417	3242.76	97.12
31	1	9:16:30	0.2500	3242.79	97.13
32	1	9:17:00	0.2583	3242.78	97.14
33	1	9:17:30	0.2667	3242.77	97.14
34	1	9:18:00	0.2750	3242.78	97.14
35	1	9:18:30	0.2833	3242.80	97.15
36	1	9:19:00	0.2917	3242.84	97.16
37	1	9:19:30	0.3000	3242.85	97.16
38	1	9:20:00	0.3083	3242.86	97.16
39	1	9:20:30	0.3167	3242.89	97.17
40	1	9:21:00	0.3250	3242.87	97.17
41	1	9:21:30	0.3333	3242.90	97.18
42	1	9:22:00	0.3417	3242.91	97.18
43	1	9:22:30	0.3500	3242.94	97.19
44	1	9:23:00	0.3583	3242.95	97.19
45	1	9:23:30	0.3667	3242.96	97.19
46	1	9:24:00	0.3750	3243.00	97.20
47	1	9:24:30	0.3833	3242.99	97.20
48	1	9:25:00	0.3917	3242.99	97.20
49	1	9:25:30	0.4000	3243.00	97.20
50	1	9:26:00	0.4083	3243.01	97.21
51	1	9:26:30	0.4167	3243.05	97.21
52	1	9:27:00	0.4250	3243.07	97.22
53	1	9:27:30	0.4333	3243.09	97.22
54	1	9:28:00	0.4417	3243.22	97.23
55	1	9:28:30	0.4500	3243.23	97.23
56	1	9:29:00	0.4583	3243.23	97.23
57	1	9:29:30	0.4667	3243.25	97.23
58	1	9:30:00	0.4750	3243.29	97.24
59	1	9:30:30	0.4833	3243.31	97.23
60	1	9:31:00	0.4917	3243.33	97.24

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Injection Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
61	1	9:31:30	0.5000	3243.35	97.24
62	1	9:32:00	0.5083	3243.35	97.24
63	1	9:32:30	0.5167	3243.36	97.25
64	1	9:33:00	0.5250	3243.37	97.25
65	1	9:33:30	0.5333	3243.38	97.25
66	1	9:34:00	0.5417	3243.21	97.25
67	1	9:34:30	0.5500	3243.25	97.26
68	1	9:35:00	0.5583	3243.22	97.26
69	1	9:35:30	0.5667	3243.18	97.26
70	1	9:36:00	0.5750	3243.23	97.27
71	1	9:36:30	0.5833	3243.11	97.27
72	1	9:37:00	0.5917	3243.11	97.27
73	1	9:37:30	0.6000	3243.13	97.27
74	1	9:38:00	0.6083	3243.15	97.28
75	1	9:38:30	0.6167	3243.27	97.28
76	1	9:39:00	0.6250	3243.25	97.28
77	1	9:39:30	0.6333	3243.30	97.29
78	1	9:40:00	0.6417	3243.29	97.28
79	1	9:40:30	0.6500	3243.32	97.29
80	1	9:41:00	0.6583	3243.72	97.29
81	1	9:41:30	0.6667	3243.74	97.29
82	1	9:42:00	0.6750	3243.76	97.30
83	1	9:42:30	0.6833	3243.75	97.29
84	1	9:43:00	0.6917	3243.79	97.30
85	1	9:43:30	0.7000	3243.81	97.30
86	1	9:44:00	0.7083	3243.81	97.30
87	1	9:44:30	0.7167	3243.91	97.30
88	1	9:45:00	0.7250	3243.96	97.31
89	1	9:45:30	0.7333	3243.95	97.31
90	1	9:46:00	0.7417	3243.96	97.31
91	1	9:46:30	0.7500	3243.97	97.31
92	1	9:47:00	0.7583	3244.00	97.31
93	1	9:47:30	0.7667	3244.03	97.32
94	1	9:48:00	0.7750	3244.02	97.32
95	1	9:48:30	0.7833	3244.00	97.31
96	1	9:49:00	0.7917	3244.02	97.32
97	1	9:49:30	0.8000	3244.03	97.32
98	1	9:50:00	0.8083	3244.05	97.33
99	1	9:50:30	0.8167	3244.04	97.32
100	1	9:51:00	0.8250	3244.05	97.33
101	1	9:51:30	0.8333	3244.08	97.33
102	1	9:52:00	0.8417	3244.62	97.33
103	1	9:52:30	0.8500	3244.73	97.33
104	1	9:53:00	0.8583	3244.82	97.34
105	1	9:53:30	0.8667	3244.88	97.34
106	1	9:54:00	0.8750	3244.99	97.34
107	1	9:54:30	0.8833	3245.00	97.34
108	1	9:55:00	0.8917	3245.07	97.33
109	1	9:55:30	0.9000	3244.93	97.33
110	1	9:56:00	0.9083	3244.35	97.33
111	1	9:56:30	0.9167	3243.91	97.32
112	1	9:57:00	0.9250	3243.69	97.32
113	1	9:57:30	0.9333	3243.06	97.32
114	1	9:58:00	0.9417	3242.75	97.30
115	1	9:58:30	0.9500	3242.66	97.30
116	1	9:59:00	0.9583	3242.57	97.29
117	1	9:59:30	0.9667	3242.52	97.28
118	1	10:00:00	0.9750	3242.77	97.27
119	1	10:00:30	0.9833	3243.28	97.26
120	1	10:01:00	0.9917	3243.54	97.24

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Injection Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
121	1	10:01:30	1.0000	3244.13	97.23
122	1	10:02:00	1.0083	3244.43	97.22
123	1	10:02:30	1.0167	3244.86	97.20
124	1	10:03:00	1.0250	3245.25	97.19
125	1	10:03:05	1.0264	3245.22	97.18

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
1	1	10:03:05	0.0000	3245.22	97.18
2	1	10:05:35	0.0417	3208.72	97.12
3	1	10:08:05	0.0833	3198.78	97.11
4	1	10:10:35	0.1250	3196.32	97.11
5	1	10:13:05	0.1667	3195.46	97.12
6	1	10:15:35	0.2083	3195.03	97.12
7	1	10:18:05	0.2500	3194.70	97.12
8	1	10:20:35	0.2917	3194.48	97.12
9	1	10:23:05	0.3333	3194.26	97.13
10	1	10:25:35	0.3750	3194.10	97.14
11	1	10:28:05	0.4167	3193.90	97.14
12	1	10:30:35	0.4583	3193.77	97.15
13	1	10:33:05	0.5000	3193.67	97.15
14	1	10:35:35	0.5417	3193.57	97.15
15	1	10:38:05	0.5833	3193.51	97.16
16	1	10:40:35	0.6250	3193.43	97.17
17	1	10:43:05	0.6667	3193.34	97.16
18	1	10:45:35	0.7083	3193.26	97.17
19	1	10:48:05	0.7500	3193.21	97.17
20	1	10:50:35	0.7917	3193.14	97.18
21	1	10:53:05	0.8333	3193.10	97.18
22	1	10:55:35	0.8750	3193.04	97.19
23	1	10:58:05	0.9167	3193.02	97.20
24	1	11:00:35	0.9583	3192.95	97.20
25	1	11:03:05	1.0000	3192.90	97.20
26	1	11:05:35	1.0417	3192.86	97.21
27	1	11:08:05	1.0833	3192.81	97.21
28	1	11:10:35	1.1250	3192.79	97.21
29	1	11:13:05	1.1667	3192.76	97.22
30	1	11:15:35	1.2083	3192.72	97.23
31	1	11:18:05	1.2500	3192.67	97.22
32	1	11:20:35	1.2917	3192.65	97.23
33	1	11:23:05	1.3333	3192.62	97.24
34	1	11:25:35	1.3750	3192.59	97.24
35	1	11:28:05	1.4167	3192.57	97.25
36	1	11:30:35	1.4583	3192.54	97.25
37	1	11:33:05	1.5000	3192.50	97.25
38	1	11:35:35	1.5417	3192.51	97.26
39	1	11:38:05	1.5833	3192.48	97.27
40	1	11:40:35	1.6250	3192.46	97.27
41	1	11:43:05	1.6667	3192.42	97.27
42	1	11:45:35	1.7083	3192.42	97.29
43	1	11:48:05	1.7500	3192.38	97.29
44	1	11:50:35	1.7917	3192.34	97.29
45	1	11:53:00	1.8319	3192.35	97.29
46	1	11:55:30	1.8736	3192.34	97.29
47	1	11:58:00	1.9153	3192.33	97.30
48	1	12:00:30	1.9569	3192.31	97.31
49	1	12:03:00	1.9986	3192.27	97.32
50	1	12:05:30	2.0403	3192.25	97.32
51	1	12:08:00	2.0819	3192.26	97.32
52	1	12:10:30	2.1236	3192.25	97.33
53	1	12:13:00	2.1653	3192.22	97.34
54	1	12:15:30	2.2069	3192.22	97.34
55	1	12:18:00	2.2486	3192.21	97.34
56	1	12:20:30	2.2903	3192.18	97.34
57	1	12:23:00	2.3319	3192.18	97.35
58	1	12:25:30	2.3736	3192.17	97.36
59	1	12:28:00	2.4153	3192.16	97.36
60	1	12:30:30	2.4569	3192.15	97.36

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
61	1	12:33:00	2.4986	3192.09	97.37
62	1	12:35:30	2.5403	3192.12	97.38
63	1	12:38:00	2.5819	3192.10	97.38
64	1	12:40:30	2.6236	3192.09	97.39
65	1	12:43:00	2.6653	3192.09	97.39
66	1	12:45:30	2.7069	3192.08	97.39
67	1	12:48:00	2.7486	3192.03	97.40
68	1	12:50:30	2.7903	3192.05	97.41
69	1	12:53:00	2.8319	3192.04	97.41
70	1	12:55:30	2.8736	3192.00	97.42
71	1	12:58:00	2.9153	3192.01	97.42
72	1	13:00:30	2.9569	3192.01	97.42
73	1	13:03:00	2.9986	3191.96	97.42
74	1	13:05:30	3.0403	3191.99	97.44
75	1	13:08:00	3.0819	3191.98	97.44
76	1	13:10:30	3.1236	3191.97	97.45
77	1	13:13:00	3.1653	3191.94	97.45
78	1	13:15:30	3.2069	3191.94	97.46
79	1	13:18:00	3.2486	3191.91	97.46
80	1	13:20:30	3.2903	3191.92	97.47
81	1	13:23:00	3.3319	3191.88	97.46
82	1	13:25:30	3.3736	3191.88	97.47
83	1	13:28:00	3.4153	3191.88	97.47
84	1	13:30:30	3.4569	3191.85	97.47
85	1	13:33:00	3.4986	3191.86	97.48
86	1	13:35:30	3.5403	3191.84	97.47
87	1	13:38:00	3.5819	3191.82	97.47
88	1	13:40:30	3.6236	3191.82	97.48
89	1	13:43:00	3.6653	3191.84	97.49
90	1	13:45:30	3.7069	3191.85	97.50
91	1	13:48:00	3.7486	3191.81	97.50
92	1	13:50:30	3.7903	3191.79	97.50
93	1	13:53:00	3.8319	3191.82	97.51
94	1	13:55:30	3.8736	3191.81	97.52
95	1	13:58:00	3.9153	3191.86	97.54
96	1	14:00:30	3.9569	3191.87	97.57
97	1	14:03:00	3.9986	3191.86	97.59
98	1	14:05:30	4.0403	3191.80	97.62
99	1	14:08:00	4.0819	3191.81	97.63
100	1	14:10:30	4.1236	3191.79	97.64
101	1	14:13:00	4.1653	3191.74	97.64
102	1	14:15:30	4.2069	3191.75	97.65
103	1	14:18:00	4.2486	3191.75	97.66
104	1	14:20:30	4.2903	3191.72	97.66
105	1	14:23:00	4.3319	3191.71	97.66
106	1	14:25:30	4.3736	3191.72	97.67
107	1	14:28:00	4.4153	3191.73	97.68
108	1	14:30:30	4.4569	3191.70	97.68
109	1	14:33:00	4.4986	3191.70	97.69
110	1	14:35:30	4.5403	3191.71	97.69
111	1	14:38:00	4.5819	3191.70	97.71
112	1	14:40:30	4.6236	3191.73	97.73
113	1	14:43:00	4.6653	3191.69	97.74
114	1	14:45:30	4.7069	3191.74	97.76
115	1	14:48:00	4.7486	3191.64	97.78
116	1	14:50:30	4.7903	3191.64	97.79
117	1	14:53:00	4.8319	3191.68	97.81
118	1	14:55:30	4.8736	3191.64	97.80
119	1	14:58:00	4.9153	3191.64	97.81
120	1	15:00:30	4.9569	3191.64	97.81

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
121	1	15:03:00	4.9986	3191.63	97.82
122	1	15:05:30	5.0403	3191.64	97.83
123	1	15:08:00	5.0819	3191.64	97.83
124	1	15:10:30	5.1236	3191.66	97.84
125	1	15:13:00	5.1653	3191.63	97.88
126	1	15:15:30	5.2069	3191.67	97.90
127	1	15:18:00	5.2486	3191.65	97.92
128	1	15:20:30	5.2903	3191.61	97.92
129	1	15:23:00	5.3319	3191.57	97.93
130	1	15:25:30	5.3736	3191.59	97.94
131	1	15:28:00	5.4153	3191.58	97.94
132	1	15:30:30	5.4569	3191.61	97.95
133	1	15:33:00	5.4986	3191.58	97.95
134	1	15:35:30	5.5403	3191.57	97.97
135	1	15:38:00	5.5819	3191.51	97.97
136	1	15:40:30	5.6236	3191.53	97.98
137	1	15:43:00	5.6653	3191.53	97.99
138	1	15:45:30	5.7069	3191.49	97.98
139	1	15:48:00	5.7486	3191.49	97.99
140	1	15:50:30	5.7903	3191.48	97.99
141	1	15:53:00	5.8319	3191.47	97.99
142	1	15:55:30	5.8736	3191.43	97.98
143	1	15:58:00	5.9153	3191.41	97.97
144	1	16:00:30	5.9569	3191.43	97.98
145	1	16:03:00	5.9986	3191.41	97.98
146	1	16:05:30	6.0403	3191.41	97.97
147	1	16:08:00	6.0819	3191.41	97.97
148	1	16:10:30	6.1236	3191.41	97.98
149	1	16:13:00	6.1653	3191.37	97.97
150	1	16:15:30	6.2069	3191.38	97.97
151	1	16:18:00	6.2486	3191.39	97.97
152	1	16:20:30	6.2903	3191.38	97.97
153	1	16:23:00	6.3319	3191.38	97.98
154	1	16:25:30	6.3736	3191.36	97.97
155	1	16:28:00	6.4153	3191.37	97.97
156	1	16:30:30	6.4569	3191.36	97.97
157	1	16:33:00	6.4986	3191.37	97.98
158	1	16:35:30	6.5403	3191.36	97.97
159	1	16:38:00	6.5819	3191.38	97.98
160	1	16:40:30	6.6236	3191.36	97.98
161	1	16:43:00	6.6653	3191.35	97.98
162	1	16:45:30	6.7069	3191.35	97.98
163	1	16:48:00	6.7486	3191.35	97.98
164	1	16:50:30	6.7903	3191.36	97.99
165	1	16:53:00	6.8319	3191.34	97.99
166	1	16:55:30	6.8736	3191.32	97.98
167	1	16:58:00	6.9153	3191.33	97.99
168	1	17:00:30	6.9569	3191.30	97.98
169	1	17:03:00	6.9986	3191.29	97.98
170	1	17:05:30	7.0403	3191.27	97.98
171	1	17:08:00	7.0819	3191.28	97.97
172	1	17:10:30	7.1236	3191.28	97.98
173	1	17:13:00	7.1653	3191.24	97.96
174	1	17:15:30	7.2069	3191.27	97.95
175	1	17:18:00	7.2486	3191.25	97.94
176	1	17:20:30	7.2903	3191.28	97.95
177	1	17:23:00	7.3319	3191.26	97.94
178	1	17:25:30	7.3736	3191.28	97.94
179	1	17:28:00	7.4153	3191.29	97.95
180	1	17:30:30	7.4569	3191.28	97.95

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
181	1	17:33:00	7.4986	3191.27	97.95
182	1	17:35:30	7.5403	3191.25	97.94
183	1	17:38:00	7.5819	3191.25	97.95
184	1	17:40:30	7.6236	3191.24	97.95
185	1	17:43:00	7.6653	3191.24	97.95
186	1	17:45:30	7.7069	3191.23	97.95
187	1	17:48:00	7.7486	3191.24	97.95
188	1	17:50:30	7.7903	3191.23	97.95
189	1	17:53:00	7.8319	3191.25	97.96
190	1	17:55:30	7.8736	3191.23	97.96
191	1	17:58:00	7.9153	3191.21	97.96
192	1	18:00:30	7.9569	3191.22	97.96
193	1	18:03:00	7.9986	3191.21	97.96
194	1	18:05:30	8.0403	3191.21	97.96
195	1	18:08:00	8.0819	3191.19	97.96
196	1	18:10:30	8.1236	3191.20	97.96
197	1	18:13:00	8.1653	3191.20	97.96
198	1	18:15:30	8.2069	3191.19	97.96
199	1	18:18:00	8.2486	3191.20	97.97
200	1	18:20:30	8.2903	3191.20	97.97
201	1	18:23:00	8.3319	3191.19	97.97
202	1	18:25:30	8.3736	3191.17	97.97
203	1	18:28:00	8.4153	3191.16	97.97
204	1	18:30:30	8.4569	3191.16	97.97
205	1	18:33:00	8.4986	3191.16	97.98
206	1	18:35:30	8.5403	3191.15	97.98
207	1	18:38:00	8.5819	3191.17	97.99
208	1	18:40:30	8.6236	3191.16	97.98
209	1	18:43:00	8.6653	3191.14	97.98
210	1	18:45:30	8.7069	3191.14	97.98
211	1	18:48:00	8.7486	3191.16	97.99
212	1	18:50:30	8.7903	3191.14	97.99
213	1	18:53:00	8.8319	3191.11	97.99
214	1	18:55:30	8.8736	3191.12	97.99
215	1	18:58:00	8.9153	3191.15	98.00
216	1	19:00:30	8.9569	3191.13	98.00
217	1	19:03:00	8.9986	3191.12	98.00
218	1	19:05:30	9.0403	3191.13	98.01
219	1	19:08:00	9.0819	3191.10	98.01
220	1	19:10:30	9.1236	3191.10	98.01
221	1	19:13:00	9.1653	3191.11	98.01
222	1	19:15:30	9.2069	3191.10	98.01
223	1	19:18:00	9.2486	3191.11	98.02
224	1	19:20:30	9.2903	3191.09	98.02
225	1	19:23:00	9.3319	3191.09	98.02
226	1	19:25:30	9.3736	3191.08	98.02
227	1	19:28:00	9.4153	3191.11	98.03
228	1	19:30:30	9.4569	3191.12	98.04
229	1	19:33:00	9.4986	3191.12	98.04
230	1	19:35:30	9.5403	3191.09	98.04
231	1	19:38:00	9.5819	3191.08	98.04
232	1	19:40:30	9.6236	3191.07	98.04
233	1	19:43:00	9.6653	3191.06	98.04
234	1	19:45:30	9.7069	3191.05	98.04
235	1	19:48:00	9.7486	3191.07	98.05
236	1	19:50:30	9.7903	3191.05	98.04
237	1	19:53:00	9.8319	3191.05	98.05
238	1	19:55:30	9.8736	3191.04	98.04
239	1	19:58:00	9.9153	3191.03	98.04
240	1	20:00:30	9.9569	3190.99	98.03

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
241	1	20:03:00	9.9986	3191.00	98.03
242	1	20:05:30	10.0403	3191.03	98.03
243	1	20:08:00	10.0819	3191.01	98.02
244	1	20:10:30	10.1236	3191.01	98.02
245	1	20:13:00	10.1653	3191.00	98.01
246	1	20:15:30	10.2069	3190.99	98.00
247	1	20:18:00	10.2486	3191.01	98.01
248	1	20:20:30	10.2903	3191.00	98.01
249	1	20:23:00	10.3319	3190.98	98.00
250	1	20:25:30	10.3736	3190.98	98.00
251	1	20:28:00	10.4153	3190.98	98.00
252	1	20:30:30	10.4569	3191.02	98.01
253	1	20:33:00	10.4986	3191.01	98.01
254	1	20:35:30	10.5403	3190.98	98.01
255	1	20:38:00	10.5819	3190.94	98.00
256	1	20:40:30	10.6236	3190.97	98.01
257	1	20:43:00	10.6653	3190.98	98.01
258	1	20:45:30	10.7069	3190.97	98.01
259	1	20:48:00	10.7486	3190.95	98.01
260	1	20:50:30	10.7903	3190.96	98.01
261	1	20:53:00	10.8319	3191.00	98.02
262	1	20:55:30	10.8736	3190.98	98.02
263	1	20:58:00	10.9153	3190.95	98.02
264	1	21:00:30	10.9569	3190.96	98.03
265	1	21:03:00	10.9986	3190.97	98.03
266	1	21:05:30	11.0403	3190.96	98.03
267	1	21:08:00	11.0819	3190.98	98.04
268	1	21:10:30	11.1236	3190.95	98.04
269	1	21:13:00	11.1653	3190.98	98.05
270	1	21:15:30	11.2069	3190.96	98.05
271	1	21:18:00	11.2486	3190.95	98.05
272	1	21:20:30	11.2903	3190.94	98.05
273	1	21:23:00	11.3319	3190.93	98.05
274	1	21:25:30	11.3736	3190.94	98.06
275	1	21:28:00	11.4153	3190.90	98.05
276	1	21:30:30	11.4569	3190.94	98.06
277	1	21:33:00	11.4986	3190.94	98.07
278	1	21:35:30	11.5403	3190.93	98.07
279	1	21:38:00	11.5819	3190.93	98.07
280	1	21:40:30	11.6236	3190.93	98.08
281	1	21:43:00	11.6653	3190.91	98.08
282	1	21:45:30	11.7069	3190.90	98.08
283	1	21:48:00	11.7486	3190.91	98.08
284	1	21:50:30	11.7903	3190.93	98.09
285	1	21:53:00	11.8319	3190.92	98.09
286	1	21:55:30	11.8736	3190.87	98.08
287	1	21:58:00	11.9153	3190.90	98.09
288	1	22:00:30	11.9569	3190.91	98.09
289	1	22:03:00	11.9986	3190.90	98.10
290	1	22:05:30	12.0403	3190.89	98.09
291	1	22:08:00	12.0819	3190.92	98.10
292	1	22:10:30	12.1236	3190.87	98.10
293	1	22:13:00	12.1653	3190.90	98.11
294	1	22:15:30	12.2069	3190.91	98.12
295	1	22:18:00	12.2486	3190.89	98.12
296	1	22:20:30	12.2903	3190.85	98.11
297	1	22:23:00	12.3319	3190.87	98.12
298	1	22:25:30	12.3736	3190.87	98.12
299	1	22:28:00	12.4153	3190.86	98.13
300	1	22:30:30	12.4569	3190.85	98.13

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
301	1	22:33:00	12.4986	3190.84	98.13
302	1	22:35:30	12.5403	3190.84	98.13
303	1	22:38:00	12.5819	3190.85	98.13
304	1	22:40:30	12.6236	3190.84	98.13
305	1	22:43:00	12.6653	3190.82	98.12
306	1	22:45:30	12.7069	3190.82	98.13
307	1	22:48:00	12.7486	3190.85	98.13
308	1	22:50:30	12.7903	3190.84	98.13
309	1	22:53:00	12.8319	3190.86	98.14
310	1	22:55:30	12.8736	3190.86	98.14
311	1	22:58:00	12.9153	3190.86	98.15
312	1	23:00:30	12.9569	3190.87	98.16
313	1	23:03:00	12.9986	3190.85	98.16
314	1	23:05:30	13.0403	3190.84	98.16
315	1	23:08:00	13.0819	3190.82	98.16
316	1	23:10:30	13.1236	3190.84	98.17
317	1	23:13:00	13.1653	3190.84	98.17
318	1	23:15:30	13.2069	3190.80	98.16
319	1	23:18:00	13.2486	3190.83	98.18
320	1	23:20:30	13.2903	3190.82	98.18
321	1	23:23:00	13.3319	3190.79	98.17
322	1	23:25:30	13.3736	3190.80	98.17
323	1	23:28:00	13.4153	3190.82	98.18
324	1	23:30:30	13.4569	3190.81	98.18
325	1	23:33:00	13.4986	3190.78	98.18
326	1	23:35:30	13.5403	3190.79	98.18
327	1	23:38:00	13.5819	3190.82	98.19
328	1	23:40:30	13.6236	3190.81	98.19
329	1	23:43:00	13.6653	3190.78	98.19
330	1	23:45:30	13.7069	3190.79	98.19
331	1	23:48:00	13.7486	3190.80	98.20
332	1	23:50:30	13.7903	3190.78	98.20
333	1	23:53:00	13.8319	3190.78	98.20
334	1	23:55:30	13.8736	3190.77	98.20
335	1	23:58:00	13.9153	3190.77	98.20
336	1	0:00:30	13.9569	3190.77	98.19
337	1	0:03:00	13.9986	3190.76	98.19
338	1	0:05:30	14.0403	3190.73	98.18
339	1	0:08:00	14.0819	3190.73	98.17
340	1	0:10:30	14.1236	3190.70	98.15
341	1	0:13:00	14.1653	3190.73	98.15
342	1	0:15:30	14.2069	3190.71	98.14
343	1	0:18:00	14.2486	3190.72	98.13
344	1	0:20:30	14.2903	3190.71	98.13
345	1	0:23:00	14.3319	3190.70	98.12
346	1	0:25:30	14.3736	3190.72	98.13
347	1	0:28:00	14.4153	3190.69	98.12
348	1	0:30:30	14.4569	3190.72	98.12
349	1	0:33:00	14.4986	3190.73	98.13
350	1	0:35:30	14.5403	3190.74	98.13
351	1	0:38:00	14.5819	3190.72	98.13
352	1	0:40:30	14.6236	3190.72	98.13
353	1	0:43:00	14.6653	3190.75	98.14
354	1	0:45:30	14.7069	3190.72	98.14
355	1	0:48:00	14.7486	3190.73	98.14
356	1	0:50:30	14.7903	3190.72	98.14
357	1	0:53:00	14.8319	3190.72	98.15
358	1	0:55:30	14.8736	3190.70	98.14
359	1	0:58:00	14.9153	3190.68	98.14
360	1	1:00:30	14.9569	3190.70	98.15

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
361	1	1:03:00	14.9986	3190.72	98.16
362	1	1:05:30	15.0403	3190.71	98.16
363	1	1:08:00	15.0819	3190.70	98.16
364	1	1:10:30	15.1236	3190.70	98.17
365	1	1:13:00	15.1653	3190.69	98.17
366	1	1:15:30	15.2069	3190.68	98.17
367	1	1:18:00	15.2486	3190.67	98.17
368	1	1:20:30	15.2903	3190.69	98.18
369	1	1:23:00	15.3319	3190.68	98.18
370	1	1:25:30	15.3736	3190.68	98.19
371	1	1:28:00	15.4153	3190.68	98.19
372	1	1:30:30	15.4569	3190.66	98.19
373	1	1:33:00	15.4986	3190.67	98.19
374	1	1:35:30	15.5403	3190.71	98.20
375	1	1:38:00	15.5819	3190.70	98.20
376	1	1:40:30	15.6236	3190.71	98.21
377	1	1:43:00	15.6653	3190.70	98.21
378	1	1:45:30	15.7069	3190.71	98.22
379	1	1:48:00	15.7486	3190.68	98.22
380	1	1:50:30	15.7903	3190.70	98.22
381	1	1:53:00	15.8319	3190.69	98.23
382	1	1:55:30	15.8736	3190.69	98.23
383	1	1:58:00	15.9153	3190.66	98.23
384	1	2:00:30	15.9569	3190.69	98.24
385	1	2:03:00	15.9986	3190.66	98.24
386	1	2:05:30	16.0403	3190.67	98.24
387	1	2:08:00	16.0819	3190.66	98.24
388	1	2:10:30	16.1236	3190.67	98.25
389	1	2:13:00	16.1653	3190.67	98.26
390	1	2:15:30	16.2069	3190.68	98.26
391	1	2:18:00	16.2486	3190.66	98.26
392	1	2:20:30	16.2903	3190.64	98.26
393	1	2:23:00	16.3319	3190.65	98.27
394	1	2:25:30	16.3736	3190.64	98.27
395	1	2:28:00	16.4153	3190.63	98.27
396	1	2:30:30	16.4569	3190.66	98.28
397	1	2:33:00	16.4986	3190.66	98.28
398	1	2:35:30	16.5403	3190.63	98.28
399	1	2:38:00	16.5819	3190.66	98.29
400	1	2:40:30	16.6236	3190.65	98.28
401	1	2:43:00	16.6653	3190.62	98.27
402	1	2:45:30	16.7069	3190.59	98.27
403	1	2:48:00	16.7486	3190.60	98.26
404	1	2:50:30	16.7903	3190.57	98.25
405	1	2:53:00	16.8319	3190.60	98.26
406	1	2:55:30	16.8736	3190.60	98.26
407	1	2:58:00	16.9153	3190.62	98.26
408	1	3:00:30	16.9569	3190.64	98.26
409	1	3:03:00	16.9986	3190.62	98.26
410	1	3:05:30	17.0403	3190.62	98.26
411	1	3:08:00	17.0819	3190.63	98.27
412	1	3:10:30	17.1236	3190.63	98.27
413	1	3:13:00	17.1653	3190.62	98.27
414	1	3:15:30	17.2069	3190.60	98.28
415	1	3:18:00	17.2486	3190.64	98.29
416	1	3:20:30	17.2903	3190.62	98.29
417	1	3:23:00	17.3319	3190.63	98.29
418	1	3:25:30	17.3736	3190.63	98.30
419	1	3:28:00	17.4153	3190.63	98.30
420	1	3:30:30	17.4569	3190.63	98.30

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
421	1	3:33:00	17.4986	3190.61	98.30
422	1	3:35:30	17.5403	3190.63	98.31
423	1	3:38:00	17.5819	3190.62	98.32
424	1	3:40:30	17.6236	3190.62	98.32
425	1	3:43:00	17.6653	3190.62	98.32
426	1	3:45:30	17.7069	3190.56	98.33
427	1	3:48:00	17.7486	3190.57	98.33
428	1	3:50:30	17.7903	3190.58	98.34
429	1	3:53:00	17.8319	3190.58	98.34
430	1	3:55:30	17.8736	3190.57	98.34
431	1	3:58:00	17.9153	3190.61	98.35
432	1	4:00:30	17.9569	3190.59	98.35
433	1	4:03:00	17.9986	3190.57	98.34
434	1	4:05:30	18.0403	3190.59	98.35
435	1	4:08:00	18.0819	3190.59	98.35
436	1	4:10:30	18.1236	3190.59	98.36
437	1	4:13:00	18.1653	3190.59	98.36
438	1	4:15:30	18.2069	3190.59	98.37
439	1	4:18:00	18.2486	3190.60	98.37
440	1	4:20:30	18.2903	3190.59	98.37
441	1	4:23:00	18.3319	3190.58	98.38
442	1	4:25:30	18.3736	3190.56	98.37
443	1	4:28:00	18.4153	3190.57	98.38
444	1	4:30:30	18.4569	3190.57	98.38
445	1	4:33:00	18.4986	3190.57	98.39
446	1	4:35:30	18.5403	3190.56	98.39
447	1	4:38:00	18.5819	3190.59	98.40
448	1	4:40:30	18.6236	3190.57	98.40
449	1	4:43:00	18.6653	3190.59	98.41
450	1	4:45:30	18.7069	3190.56	98.40
451	1	4:48:00	18.7486	3190.56	98.41
452	1	4:50:30	18.7903	3190.55	98.40
453	1	4:53:00	18.8319	3190.57	98.41
454	1	4:55:30	18.8736	3190.55	98.41
455	1	4:58:00	18.9153	3190.55	98.41
456	1	5:00:30	18.9569	3190.53	98.41
457	1	5:03:00	18.9986	3190.55	98.42
458	1	5:05:30	19.0403	3190.54	98.42
459	1	5:08:00	19.0819	3190.54	98.42
460	1	5:10:30	19.1236	3190.57	98.43
461	1	5:13:00	19.1653	3190.56	98.43
462	1	5:15:30	19.2069	3190.56	98.43
463	1	5:18:00	19.2486	3190.55	98.43
464	1	5:20:30	19.2903	3190.56	98.44
465	1	5:23:00	19.3319	3190.57	98.44
466	1	5:25:30	19.3736	3190.55	98.44
467	1	5:28:00	19.4153	3190.55	98.45
468	1	5:30:30	19.4569	3190.53	98.45
469	1	5:33:00	19.4986	3190.54	98.45
470	1	5:35:30	19.5403	3190.53	98.45
471	1	5:38:00	19.5819	3190.55	98.46
472	1	5:40:30	19.6236	3190.56	98.46
473	1	5:43:00	19.6653	3190.54	98.46
474	1	5:45:30	19.7069	3190.50	98.45
475	1	5:48:00	19.7486	3190.47	98.44
476	1	5:50:30	19.7903	3190.46	98.42
477	1	5:53:00	19.8319	3190.47	98.42
478	1	5:55:30	19.8736	3190.48	98.41
479	1	5:58:00	19.9153	3190.48	98.40
480	1	6:00:30	19.9569	3190.48	98.40

Company: TMDP
Well: WDW-422
Field: Deer Park, Texas

Start Date: 06/07/21
Gauge: Calscan SN 91334
Gauge Depth: 7,216 feet

Falloff Test

REC #	DAY	REAL TIME	DT (HRS)	BHP (PSIA)	TEMP. (DEG F)
481	1	6:03:00	19.9986	3190.53	98.41
482	1	6:05:30	20.0403	3190.53	98.41
483	1	6:08:00	20.0819	3190.54	98.42
484	1	6:10:30	20.1236	3190.50	98.41
485	1	6:13:00	20.1653	3190.54	98.42
486	1	6:15:30	20.2069	3190.54	98.43
487	1	6:18:00	20.2486	3190.53	98.42
488	1	6:20:30	20.2903	3190.51	98.43
489	1	6:23:00	20.3319	3190.53	98.43
490	1	6:25:30	20.3736	3190.55	98.44
491	1	6:28:00	20.4153	3190.51	98.44
492	1	6:30:30	20.4569	3190.50	98.44
493	1	6:33:00	20.4986	3190.48	98.44
494	1	6:35:30	20.5403	3190.50	98.45
495	1	6:38:00	20.5819	3190.50	98.45
496	1	6:40:30	20.6236	3190.51	98.45
497	1	6:43:00	20.6653	3190.51	98.46
498	1	6:45:30	20.7069	3190.52	98.47
499	1	6:48:00	20.7486	3190.51	98.47
500	1	6:50:30	20.7903	3190.51	98.48
501	1	6:53:00	20.8319	3190.50	98.48
502	1	6:55:30	20.8736	3190.50	98.48
503	1	6:58:00	20.9153	3190.49	98.48
504	1	7:00:30	20.9569	3190.51	98.49
505	1	7:03:00	20.9986	3190.48	98.49
506	1	7:05:30	21.0403	3190.50	98.49
507	1	7:08:00	21.0819	3190.48	98.49
508	1	7:10:30	21.1236	3190.50	98.50
509	1	7:13:00	21.1653	3190.51	98.51
510	1	7:15:30	21.2069	3190.50	98.51
511	1	7:18:00	21.2486	3190.50	98.51
512	1	7:20:30	21.2903	3190.49	98.52
513	1	7:23:00	21.3319	3190.48	98.52
514	1	7:25:30	21.3736	3190.51	98.53
515	1	7:28:00	21.4153	3190.48	98.52
516	1	7:30:30	21.4569	3190.47	98.53
517	1	7:33:00	21.4986	3190.48	98.53
518	1	7:35:30	21.5403	3190.50	98.54
519	1	7:38:00	21.5819	3190.48	98.54
520	1	7:40:30	21.6236	3190.45	98.53
521	1	7:43:00	21.6653	3190.47	98.54
522	1	7:45:30	21.7069	3190.44	98.54
523	1	7:48:00	21.7486	3190.44	98.54
524	1	7:50:30	21.7903	3190.45	98.54
525	1	7:53:00	21.8319	3190.50	98.56
526	1	7:55:30	21.8736	3190.45	98.55
527	1	7:58:00	21.9153	3190.43	98.55
528	1	8:00:30	21.9569	3190.48	98.56
529	1	8:03:00	21.9986	3190.44	98.55
530	1	8:03:30	22.0069	3190.45	98.56

Cal-scan Services Ltd.

4188-93 Street
Edmonton, Alberta, Canada
T6E 5P5

Phone: (780) 944-1377 Fax: (780) 944 - 1406

Calibration Certificate

Model :	Badger Low Temp	Range :	10,000.00	psi
Serial Number :	91334	Last Cal. Date :	10-July-2020	

Specifications

Calibration Pressure Range: 0.00 10,000.00 psi

Calibration Temperature Range: 0.00 150.00 °C

Pressure: Accuracy ± 2.4000 psi (0.024 %FS)

 Resolution ± 0.0300 psi (0.0003 %FS)

Temperature: Accuracy ± 0.40 °C

 Resolution ± 0.001 °C

Calibration Summary

Pressure: Accuracy (maximum error) -0.88 psi

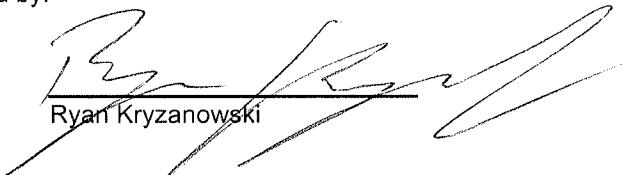
Temperature: Accuracy (maximum error) 0.13 °C

Traceability Statement

All working standards are traceable to national or internationally recognized standards.

Calibrated with Cal-Scan DWG # 6

Calibrated by:



Ryan Kryzanowski

APPENDIX G

Laboratory Analysis Report

Total Number of Pages: 21

Job ID : 21060739



10100 East Freeway, Suite 100, Houston, TX 77029 tel: 713-453-6060, fax: 713-453-6091, http://www.ablabs.com

Client Project Name :
MIT WDW 422 TMDPS

Report To : Client Name: Texas Molecular LLC.
Attn: Felton Greer.Jr.
Client Address: 2525 Battleground Road
City, State, Zip: Deer Park, Texas, 77536

P.O.#.: 3168
Sample Collected By:
Date Collected: 06/05/21 - 06/08/21

A&B Labs has analyzed the following samples...

Client Sample ID	Matrix	A&B Sample ID
MIT WDW 422 6/5 0800	Water	21060739.01
MIT WDW 422 6/5 1200	Water	21060739.02
MIT WDW 422 6/5 1600	Water	21060739.03
MIT WDW 422 6/5 2000	Water	21060739.04
MIT WDW 422 6/6 0000	Water	21060739.05
MIT WDW 422 6/6 0400	Water	21060739.06
MIT WDW 422 6/6 0800	Water	21060739.07
MIT WDW 422 6/6 1200	Water	21060739.08
MIT WDW 422 6/6 1600	Water	21060739.09
MIT WDW 422 6/6 2000	Water	21060739.10
MIT WDW 422 6/8 0000	Water	21060739.11
MIT WDW 422 6/8 0400	Water	21060739.12
MIT WDW 422 6/8 0800	Water	21060739.13

Released By: Senthilkumar Sevukan

Title: Vice President Operations

Date: 6/15/2021



This Laboratory is NELAP (T104704213) accredited. Effective: 04/01/2021; Expires: 3/31/2022
Scope: Non-Potable Water, Drinking Water, Air, Solid, Biological Tissue, Hazardous Waste

I am the laboratory manager, or his/her designee, and I am responsible for the release of this data package. This laboratory data package has been reviewed and is complete and technically compliant with the requirements of the methods used, except where noted in the attached exception reports. I affirm, to the best of my knowledge that all problems/anomalies observed by this laboratory (and if applicable, any and all laboratories subcontracted through this laboratory) that might affect the quality of the data, have been identified in the Laboratory Review Checklist, and that no information or data have been knowingly withheld that would affect the quality of the data.

This report cannot be reproduced, except in full, without prior written permission of A&B Labs. Results shown relate only to the items tested. Results apply to the sample as received. Samples are assumed to be in acceptable condition unless otherwise noted. Blank correction is not made unless otherwise noted. Air concentrations reported are based on field sampling information provided by client. Soil samples are reported on a wet weight basis unless otherwise noted. Uncertainty estimates are available on request.

ab-q210-0321

Date Received : 06/08/2021 16:28

LABORATORY TERM AND QUALIFIER DEFINITION REPORT



Job ID : 21060739

Date: 6/15/2021

General Term Definition

Back-Wt	Back Weight	Post-Wt	Post Weight
BRL	Below Reporting Limit	ppm	parts per million
cfu	colony-forming units	Pre-Wt	Previous Weight
Conc.	Concentration	Q	Qualifier
D.F.	Dilution Factor	RegLimit	Regulatory Limit
Front-Wt	Front Weight	RPD	Relative Percent Difference
LCS	Laboratory Check Standard	RptLimit	Reporting Limit
LCSD	Laboratory Check Standard Duplicate	SDL	Sample Detection Limit
MS	Matrix Spike	surr	Surrogate
MSD	Matrix Spike Duplicate	T	Time
MW	Molecular Weight	TNTC	Too numerous to count
J	Estimation. Below calibration range but above MDL		

Qualifier Definition



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/5 0800	Job Sample ID:	21060739.01						
Date Collected:	06/05/21	Sample Matrix	Water						
Time Collected:	08:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.8032	cSt	1	----			06/15/21 10:51	VMN
SM 2710F									
	Specific Gravity ¹	1.1035	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/5 1200	Job Sample ID:	21060739.02						
Date Collected:	06/05/21	Sample Matrix	Water						
Time Collected:	12:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.7673	cSt	1	----			06/15/21 10:54	VMN
SM 2710F									
	Specific Gravity ¹	1.1104	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/5 1600	Job Sample ID:	21060739.03						
Date Collected:	06/05/21	Sample Matrix	Water						
Time Collected:	16:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.7143	cSt	1	----			06/15/21 10:58	VMN
SM 2710F									
	Specific Gravity ¹	1.0878	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/5 2000	Job Sample ID:	21060739.04						
Date Collected:	06/05/21	Sample Matrix	Water						
Time Collected:	20:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.6907	cSt	1	----			06/15/21 11:01	VMN
SM 2710F									
	Specific Gravity ¹	1.0838	s.u.	1	----			06/15/21 10:00	LC

ab-q212-0321



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/6 0000	Job Sample ID:	21060739.05						
Date Collected:	06/06/21	Sample Matrix	Water						
Time Collected:	00:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.6913	cSt	1	----			06/15/21 11:04	VMN
SM 2710F									
	Specific Gravity ¹	1.0742	s.u.	1	----			06/15/21 10:00	LC

ab-q212-0321



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/6 0400	Job Sample ID:	21060739.06						
Date Collected:	06/06/21	Sample Matrix	Water						
Time Collected:	04:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.6718	cSt	1	----			06/15/21 11:07	VMN
SM 2710F									
	Specific Gravity ¹	1.0787	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/6 0800	Job Sample ID:	21060739.07						
Date Collected:	06/06/21	Sample Matrix	Water						
Time Collected:	08:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.6828	cSt	1	----			06/15/21 11:11	VMN
SM 2710F									
	Specific Gravity ¹	1.0696	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/6 1200	Job Sample ID:	21060739.08						
Date Collected:	06/06/21	Sample Matrix	Water						
Time Collected:	12:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.7118	cSt	1	----			06/15/21 11:14	VMN
SM 2710F									
	Specific Gravity ¹	1.0727	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/6 1600	Job Sample ID:	21060739.09						
Date Collected:	06/06/21	Sample Matrix	Water						
Time Collected:	16:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.7094	cSt	1	----			06/15/21 11:17	VMN
SM 2710F									
	Specific Gravity ¹	1.0726	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/6 2000	Job Sample ID:	21060739.10						
Date Collected:	06/06/21	Sample Matrix	Water						
Time Collected:	20:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.7341	cSt	1	----			06/15/21 11:21	VMN
SM 2710F									
	Specific Gravity ¹	1.1094	s.u.	1	----			06/15/21 10:00	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/8 0000	Job Sample ID:	21060739.11						
Date Collected:	06/08/21	Sample Matrix	Water						
Time Collected:	00:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.6961	cSt	1	----			06/15/21 11:24	VMN
SM 2710F									
	Specific Gravity ¹	1.0798	s.u.	1	----			06/15/21 10:15	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/8 0400	Job Sample ID:	21060739.12						
Date Collected:	06/08/21	Sample Matrix	Water						
Time Collected:	04:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.6818	cSt	1	----			06/15/21 11:27	VMN
SM 2710F									
	Specific Gravity ¹	1.0769	s.u.	1	----			06/15/21 10:15	LC



LABORATORY TEST RESULTS

Job ID : 21060739

Date 6/15/2021

Client Name:	Texas Molecular LLC.	Attn:	Felton Greer.Jr.						
Project Name:	MIT WDW 422 TMDPS								
Client Sample ID:	MIT WDW 422 6/8 0800	Job Sample ID:	21060739.13						
Date Collected:	06/08/21	Sample Matrix	Water						
Time Collected:	08:00								
Other Information:									
Test Method	Parameter/Test Description	Result	Units	DF	Rpt Limit	Reg Limit	Q	Date Time	Analyst
D-445	Kinematic Viscosity at 100 F								
	Viscosity ¹	0.7545	cSt	1	----			06/15/21 11:31	VMN
SM 2710F									
	Specific Gravity ¹	1.1053	s.u.	1	----			06/15/21 10:15	LC

ab-q212-0321

¹-Parameter not available for accreditation

QUALITY CONTROL CERTIFICATE



Job ID : 21060739

Date : 6/15/2021

Analysis : Specific Gravity

Method : SM 2710F

Reporting Units : s.u.

QC Batch ID : Qb21061519 **Created Date :** 06/15/21 **Created By :** LCoku

Samples in This QC Batch : 21060739.01,02,03,04,05,06,07,08,09,10

QC Type: Duplicate

QC Sample ID: 21060739.10

Parameter	QC Sample Result	Sample Result	Units	RPD	CtrlLimit	Qual
Specific Gravity	1.1091	1.1094	s.u.	0	20	

QUALITY CONTROL CERTIFICATE



Job ID : 21060739

Date : 6/15/2021

Analysis : Specific Gravity

Method : SM 2710F

Reporting Units : s.u.

QC Batch ID : Qb21061521 **Created Date :** 06/15/21

Created By : LCoku

Samples in This QC Batch : 21060739.11,12,13

QC Type: Duplicate

QC Sample ID: 21060739.13

Parameter	QC Sample Result	Sample Result	Units	RPD	CtrlLimit	Qual
Specific Gravity	1.1105	1.1053	s.u.	0.5	20	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 21060739

Date : 6/15/2021

Analysis : Kinematic Viscosity at 100 F

Method : D-445

Reporting Units : cSt

QC Batch ID : Qb21061599 **Created Date :** 06/15/21 **Created By :** VNair

Samples in This QC Batch : 21060739.01,02,03,04,05,06,07,08,09,10,11,12,13

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Viscosity	250	256.81	103						80-120	

ab-q213-0321

Refer to the Definition page for terms.

The Chain of Custody is a Legal Document

Page 1 of 2

10100 East Freeway (I-10) Houston, TX 77029 713-453-6060	
Job ID: 21060739	

A&B J

5. Project...

6. Project Name / Location

MIT WDW 422 TMDPS

7. Reporting Requirement

TRRP Limits Only TRRP Rpt. Package

See Attached

Standard Level II

8. Sampler's Name & Company

Sampler's Signature & Date

TEXAS MOLECULAR

9. Sample ID & Description	Lab Use Only	10. Sampling		11.		12. Matrix				13. No. of Containers	Specific Gravity	Viscosity	14. Containers*	15. Preservatives**	16. pH-Lab Only
		Date	Time	comp	grab	Water	Soil	Sludge	Oil						
MIT WDW 422															
MIT WDW 422 6/5 0800	DIA	6/5/2021	8:00		x	x				1		x	x		
MIT WDW 422 6/5 1200	D2A	6/5/2021	12:00		x	x				1		x	x		
MIT WDW 422 6/5 1600	D3A	6/5/2021	16:00		x	x				1		x	x		
MIT WDW 422 6/5 2000	D4A	6/5/2021	20:00		x	x				1		x	x		
MIT WDW 422 6/6 0000	D5A	6/6/2021	0:00		x	x				1		x	x		
MIT WDW 422 6/6 0400	D6A	6/6/2021	4:00		x	x				1		x	x		
MIT WDW 422 6/6 0800	D7A	6/6/2021	8:00		x	x				1		x	x		
MIT WDW 422 6/6 1200	D8A	6/6/2021	12:00		x	x				1		x	x		
MIT WDW 422 6/6 1600	D9A	6/6/2021	16:00		x	x				1		x	x		
MIT WDW 422 6/6 2000	D10A	6/6/2021	20:00		x	x				1		x	x		

19. RELINQUISHED BY

DATE

TIME

20. RECEIVED BY

DATE

TIME

KNOWN HAZARDS / COMMENTS:

John Clayton

6/8/21

07:36

Wendy Pepple

6/8/21

07:36

Wynona

6/8/21

14:25

Mall

6/8/21

14:25

Mall

6/8/21

16:28

21. RECEIVED BY LABORATORY

6/8/21

14:28

1709629

* Containers: VOA- 40 ml vial

A/G- Amber/Glass 1 Liter

**Preservatives: C-Cool H- HCl N- HNO3
S-H2SO4 OH- NaOH T-Na2S2O3 X- Other

Temperature: 23.2 - 1 = 23.1
Intact? Y N
Initials *mjs*

4 oz/8 oz- glass wide mouth

P/O- Plastic/other

METHOD OF SHIPMENT

BILL OF LADING/TRACKING #

A&B CANNOT ACCEPT VERBAL CHANGES. PLEASE FAX WRITTEN CHANGES TO 713-453-6091 OR EMAIL THE NEW COC TO YOUR PROJECT MANAGER.

Samples will be disposed of after 30 days.
A&B reserves the right to return samples.



Sample Condition Checklist

A&B JobID : 21060739	Date Received : 06/08/2021	Time Received : 4:28PM		
Client Name : Texas Molecular LLC.				
Temperature : 23.2-0.1cf=23.1°C	Sample pH : n/a			
Thermometer ID : 1709629	pH Paper ID : n/a			
Perservative :				
	Check Points	Yes	No	N/A
1.	Cooler seal present and signed.			X
2.	Sample(s) in a cooler.		X	
3.	If yes, ice in cooler.			X
4.	Sample(s) received with chain-of-custody.	X		
5.	C-O-C signed and dated.	X		
6.	Sample(s) received with signed sample custody seal.		X	
7.	Sample containers arrived intact. (If no comment).	X		
8. :	Matrix <input type="checkbox"/> Water <input type="checkbox"/> Soil <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Sludge <input type="checkbox"/> Solid <input type="checkbox"/> Cassette <input type="checkbox"/> Tube <input type="checkbox"/> Bulk <input type="checkbox"/> Badge <input type="checkbox"/> Food <input type="checkbox"/> Other			
9.	Sample(s) were received in appropriate container(s).	X		
10.	Sample(s) were received with proper preservative			X
11.	All samples were logged or labeled.	X		
12.	Sample ID labels match C-O-C ID's	X		
13.	Bottle count on C-O-C matches bottles found.	X		
14.	Sample volume is sufficient for analyses requested.	X		
15.	Samples were received within the hold time.	X		
16.	VOA vials completely filled.			X
17.	Sample accepted.	X		
18	Has client been contacted about sub-out			X
Comments : Include actions taken to resolve discrepancies/problem:				
1L WMG per sx.				

Received by : VHernandez

Check in by/date : VHernandez / 06/09/2021

ab-s005-0321

Phone : 713-453-6060

www.ablabs.com